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Apical membr
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                                                                                                                      SEQUENCE FROM N.A.

STRAIN=ME49;

MEDLINE=20536458; PubMed=11083833;

MEDLINE=20536458; PubMed=11083833;

Hehl A.B., Lekutis C., Grigg M.E., Bradley P.J., Dubremetz J.F.,

Ortega-Barria E., Boothroyd J.C.;

"Toxoplasma gondii Homologue of Plasmodium Apical Membrane Antigen 1
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NCBI_TaxID=5811;
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-1998 (TrEMBLrel. 05, Last sequence update)
-2003 (TrEMBLrel. 23, Last annotation update)
membrane antigen 1 homolog.
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Q9et35 uncultured
Q9eua3 environment
Q9eta1 environment
Q9f9a1 uncultured
Q9f9a8 uncultured
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Q9f9a8 uncultured
Q9f9a9 uncultured
Q9ued8 environment
Q9vea1 drosophila
Q9u913 anopheles g
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	Query Match 1.7%; Score 9; DB 13; Length 280; Best Local Similarity 100.0%; Pred. No. 1.7; Matches 9; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	SMART; SM00406; IGv; 1. PROSITE; PS50835; IG LIKE; 2. SEQUENCE 280 AA; 31411 MW; C379DE8A61C52DD0 CRC64;	Q U	g-like	_	itance and linkage of B-G-like and	Gee G.F., Briles W.E., Miller M.M.;		ria; Aves; Neognathae; Gruiformes; Gruidae;	ata; Vertebrata	50	MAR-2003 (TrEMBLrel. 23, Last annotation upda	(TremBirel 07, Created)	SSULT 2 3716 073716 PRELIMINARY; PRT; 280 AA.	541 Y 541	541 Y 541	PSFWDEA	481 RLDRNKGVQAAHHEHEFQSDRGARKKRPSDLMQEAEPSFWDEAEENIEQDGETHVMVEGD 540	421 VQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAK 480	CGSNTALIAGLAVGGVLLLALLGGGCYF	361 QVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGACD 420	LSEETPNFIIPSNPSVTF		301 FENDGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSD 360	н	IYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIERVES	KATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGE	KATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPF	121 KQSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNN 180	KOSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAL	61 HHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEY 120	PAGLCPIWGKHIELQQPDRLPYRNN	1 MGLVGVQVLLVLVADCTIFASGLSSSTRSRESQTLSASTSGNPFQANVEMKTFMERFNLT 60

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InterPro; IPR007114; MFS.
InterPro; IPR005928; Sub_transporter.
InterPro; IPR005929; Sug_transporter.
InterPro; IPR001958; TCR_TetA.
Pfam; PF00083; SUGAT_TTA.
PRINTS; PR01035; TCRTETA.
PROSITE; PS50850; MFS; 1.
PROSITE; PS508216; SUGAR_TRANSPORT_1; 1.
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Q9A9P5;
01-JUN-2001
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Q9KG75;
                     STRAIN=ATCC 1908) / CB15;

MEDLINS=21173698; Pubmed=11259647;

Nierman M.C., Feldblyum d.V., Laub M.T., Paulsen I.T., Nelson K.E.,

Risen J., Heidelberg J.F., Alley M.R.K., Ohta N., Maddock J.R.,

Potocka I., Nelson W.C., Newton A., Stephens C., Phadke N.D., Ely B

DeBoy R.T., Dodson R.J., Durkin A.S., Gwinn M.L., Haft D.H.,

Kolonay J.F., Smit J., Craven M.B., Khouri H., Shetty J., Berry K.,

Kolonay J.F., Smit J., Craven M.B., Khouri H., Shetty J., Berry K.,

Woterback T., Tran K., Wolf A., Vamathevan J., Ermolaeva M., White

Salzberg S.L., Venter J.C., Shapiro L., Fraser C.M.;

"Complete genome sequence of Caulobacter crescentus.";
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Takami H., Nakasone K., Takaki Y., Maeno G., S
Fuji F., Hirama C., Nakamura Y., Ogasawara N.,
                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                            Caulobacteraceae;
                                                                                                                                                                                                                                                                                                                                                                                 Bacteria; Proteobacteria; Alphaproteobacteria; Caulobacterales;
                                                                                                                                                                                                                                                                                                                                                                                                            Caulobacter crescentus
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SEQUENCE 387 AA
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
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Q1-MAR-2002 (TrEMBLrel. 20, Cr
Q1-MAR-2002 (TrEMBLrel. 21, La
Q1-JUN-2002 (TrEMBLrel. 21, La
Q1-Tun-tive protease (Putative A
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SEQUENCE FROM N.A.
STRAIN=0157:H7 / RIMD 0509952;
STRAIN=21156231; PubMed=11258796;
MEDLINE=21156231; PubMed=11258796; PubMed=11
                                                                                                                                                                                                                                                                                                                                                                                                                         Han C.-G., Ohtsubo E., Nakayama K., Murata T., Tanaka M., Tobe Iida T., Takami H., Honda T., Sasakawa C., Ogasawara N., Yasuna; Kuhara S., Shiba T., Hattori M., Shinagawa H.; "Complete genome sequence of enterohemorrhagic Escherichia coli 0157:H7 and genomic comparison with a laboratory strain K-12."; DNA Res. 8:11-22(2001).
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Hypothetical
SEQUENCE 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Perna N.T., Plunkett G. III, Burland V., Mau B., Glasner J.D., Rose D.J., Mayhew G.F., Evans P.S., Gregor J., Kirkpatrick H.A., Posfai G., Hackett J., Klink S., Boutin A., Shao Y., Miller L., Grotbeck E.J., Davis N.W., Lim A., Dimalanta E.T., Potamousis K., Apodaca J., Anantharaman T.S., Lin J., Yen G., Schwartz D.C., Welch R.A., Blattner F.R.,
                                                                                                                                                                                                                                                                                           DNA Res. 8:11-22(2001).

EMBL; AB005198; AAG54523.1; -.

EMBL; AP002550; BAB3566.1; -.

EMBL; AP002550; BAB33AA APPase.

InterPro; IPR003593; AAA APPase centr.

InterPro; IPR003959; KAA APPase centr.

InterPro; IPR001270; Chaprnin_clpA/B.
                                                                                                                                             Protease; Complete proteome.
SEQUENCE 923 AA; 101229 MW;
                                                                                                                                                                                                                            PRINTS; PR00300; CLPE SMART; SM00382; AAA;
                                                                                                                                                                                                                                                                                Pfam; PF00004; AAA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Genome sequence of enterohaemorrhagic Escherichia coli O157:H7.";
Nature 409:529-533(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=0157:H7 / EDL933 / ATCC 700927; MEDLINE=21074935; PubMed=11206551;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Escherichia coli
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                                                                                                                                                                                                  PROSITE; PS00870; CLPAB_1; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=83334;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 36
                                                 Similarity
9; Conserv
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GGVLLLALL 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TALIAGLAV
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                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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01 AA; 42438 MW;
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                                                                                                                                                                                                                                                    CLPPROTEASEA.
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                                            1.7%; Score 9; DB
100.0%; Pred. No. 5.
tive 0; Mismatches
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100.0%; Pred. No. 2.
tive 0; Mismatches
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Last annotation update)
ATP-dependent Clp proteinase
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13A404D0ACBCE8CA CRC64;
                                                                                                                                                     0D1465A573031035 CRC64;
                                                                         DB 16;
o. 5.1;
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o. 2.3;
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RESULT 8
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DT 01-S
DT ASKIT
OS Amby
OC Euka
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01-DEC-2001 (TrEMBLrel. 1
01-DEC-2001 (TrEMBLrel. 1
Similar to hypothetical p
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01-JUN-2001 (
01-JUN-2001 (
01-OCT-2002 (
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                                                       Q90230 PRELIMINARY; PRT; 130 AA. Q90230; Q90230; Q1-NOV-1996 (TrEMBLrel. 01, Created) Q1-NOV-1996 (TrEMBLrel. 01, Last sequence update) Q1-JUN-2002 (TrEMBLrel. 21, Last annotation update) ASKI transcription factor (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Strausberg R.;
Submitted (CCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; BC015562; AAH15562.1; -.
Hypothetical protein.
SEQUENCE 126 AA; 13807 MW; 2E34744BBEFEC1E9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Submitted (NOV-2000)
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
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Homo sapiens (Human).
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                      Ambystoma mexicanum (Axolot1).
Eukaryota; Metazoa; Chordata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=Skin
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8; Conserv
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(TrEMBLrel. 17, Last sequence update)
(TrEMBLrel. 22, Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                           1.5%; Score 8; larity 100.0%; Pred. No Conservative 0; Mismat
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Pred. No.
Craniata; Vertebrata; Euteleostomi; Salamandroidea; Ambystomatidae;
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Mismatches
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RX MEDLINE=20196006; PubMed=10731132;
RA Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
RA Adams M.D., Celniker S.E., Holt R.A., Hoskins R.A., Galle R.F.,
RA Amanatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.F.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Brandon R.C., Rogers Y.-H.C., Blazej R.G., Champe M., Pfeiffer B.D.,
RA Ballew R.M., Basu A., Baxendale J., Bayraktaroglu L., Beasley E.M.,
RA Belson K.Y., Benos P.V., Berman B.P., Bhandari D., Belshakov S.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
RA Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P.,
RA Dodson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
RA Durbin K.J., Evangelista C.C., Ferriac C., Ferriera S., Fleischmann W.,
RA Glodek A., Gong F., Gorrell J.H., Gu Z., Gubart W.M., Glasser K.,
RA Harris N.L., Harvey D., Heiman T.J., Hernandez J.R., Houck J.,
RA Hostin D., Houston K.A., Howland T.J., Wei M.-H., Ibegwam C.,
RA Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A.,
RA Liuk X., Mattei B., McIntosh T.C., McLeod M.P., McPherson D.,
RA Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A.,
RA Nelson D.R., Nelson K.A., Nixon K., Nusskern D.R., Pacleb J.M.,
RA Palazzolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G.,
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01-MAY-2000 (TrEMBLrel. 13,
01-MAY-2000 (TrEMBLrel. 13,
01-OCT-2002 (TrEMBLrel. 22,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bukaryota; Metazoā; Arthropoda; Hexapoda; Insecta; Pterygo
Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
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EMBL; X77994; CAA54956.1; -.
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Ludolph D.C., Neff A.W., Parker M.A., Mescher A.L., Smith R.C.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drosophila melanogaster (Fruit fly)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF02437; Ski_Sno;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Cloning and expression of the axolot1 proto-oncogene ski.";
Biochim. Biophys. Acta 1260:102-104(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Malacinski
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=8296;
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130 AA;
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0; Mismatches
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5. 9.5;
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RESULT 10
QBMZ21
ID QSMZ2
AC QBMZ22
DT 01-QC
RE13
GN BCDN
OS DrOB
GC Rebiy
OC Ephy
OC Ephy
OC Ephy
OC Ephy
OC STR
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OC Ephy
RP SEC
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GN HOMO OC EURAT OC MAMMA
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Shue B.C., Siden-Kiamos I., Simpson M., Skupski M.P., Smith T.,
Spier E., Spradling A.C., Stapleton M., Strong R., Sun E.,
Svirskas R., Tector C., Turner R., Venter E., Wang A.H., Wang X.,
A wang Z.-Y., Wassarman D.A., Weinstock G.M., Weissenbach J.,
I williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
I williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
I williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
I williams S.M., Woodage T., Worley K.C., Bun S., Zhu X., Zheng L.,
I williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
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I williams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A.,
I williams S.M., Woodage T., Woodage T.,
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Q8NCV9;
01-OCT-2002
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01-OCT-2002
01-MAR-2003
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Q8MZ21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (MAY-2002) to the EMBL/GenBank/DDBJ databases. EMBL; AY113408; AAM29413.1; -. FlyBase; FBgn0063060; BCDMA; RE13473. SEQUENCE 133 AA; 14822 MW; 2530B376B8666957 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Drosophila melanogaster (Fruit fly).
Drosophila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta; Pterygo
Reoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
      Homo sapiens (Human)
Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RE13473p.
BCDNA:RE13473.
                                                                                                                     Glycoprotein
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(TrEMBLrel.
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                                                                 (Human)
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Primates;
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Pred. No.
   Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                             PRT;
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pred. No. 9.7
Mismatches
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annotation
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Smith H.O.
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Q8KX04
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Best Local S
Matches 8
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Best Local S
Matches 8
                                                                                                            01-MAR-2003
01-MAR-2003
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                                                                                                                                       08GC96;
Oelschlaeger T.A.;
"Cloning, sequencing
Citrobacter freundii
                                                                                                                                                                                                                                                                                      Nomura C.T., Persson S., Zhao J., Bryant D.A.;
"An Analysis of Forty Genes Encoding Electron Transport Proteins from
"Yan Analysis of Forty Genes Encoding Electron Transport
"Yan Experience of Electron Transport
Proteins from Cyanobacteria and Chiloroplasts.";
Submitted (MAY-2001) to the EMBL/GenBank/DDBJ databases.
EMBL, AF381049; AAN03589.1; -.
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SIGNAL
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MEDLINE=22006006; PubMed=12010833;

Kissel K., Scheffler S., Kerowgan M., Bu
"Molecular basis of NB1 (HNA-2a, CD177)

Blood 99:4231-4233(2002).
                            SEQUENCE FROM N.A. STRAIN=3009;
                                                              Bacteria; Proteobacteria; Gamma; Enterobacteriaceae; Citrobacter
                                                                                 Citrobacter freundii.
                                                                                                   Putative regulatory
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                                                                                                                                                                                                                                                                                                                                                                                                              01-0CT-2002
01-0CT-2002
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01-OCT-2002
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                                                      NCBI_TaxID=546;
                                                                                            FIMZ GENE
                                                                                                                                                                                                                                                                                                                                                                                                     Hypothetical protein.
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                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=32049;
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8; Conserv
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145 AA;
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199 AA; 2:
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                                                                                                                                                 PRELIMINARY;
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15709
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                                                                                                                                                                                                                                          1.5%;
                                                                                                                                                                                                                                                                       22445 MW; 454000D4949067F4 CRC64;
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 and expression strain 3009.";
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Chroococcales;
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                                                                          Gammaproteobacteria;
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Last seq
Last ann
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Last sequence update)
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Pred. No
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Pred. No.
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EF7FB498A8B39053
                                                                                                                                                                                                                                  red. No. 14
Mismatches
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          0f
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les; Synechococcus.
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10;
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7) deficiency.";
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                                                                                                                                                                                                                                                   Length 199
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Q96B3
AC Q96B3
AC Q96B3
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AC Q96B3
DT 01-DE
DT 01-MA
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OS Homo
OC Eukar
OX NCB1
RN [1]
RN [1]
RN [1]
RR SEQUI
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Q96NG2
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Best Local S
Matches 8
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01-DEC-2001
01-DEC-2001
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Strausberg R.;
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ
EMBL; BC016043; AAH16043.1;
InterPro; IPR002965; P rich extensn.
PRINTS; PR01217; PRICHEXTENSN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (SEP-2002) to the EMBL/GenBank/DDBJ databases. EMBL; AJ508060; CAD56976.1; -. SEQUENCE 210 AA; 23624 MW; CDDDE380BF594F57 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hypothetical protein.
Homo mapiens (Human).
Eukaryota, Metazoa; Chordata;
Mammalia; Eutheria; Primatee;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q96B36;
01-DEC-2001 (TrEMBLrel. 19,
01-DEC-2001 (TrEMBLrel. 19,
01-MAR-2003 (TrEMBLrel. 23,
                                                                                                                                  SEQUENCE FROM N.A.

Ishibashi T., Kanehori K., Yosida M., Watanabe S., Ishida S., Ono Y.,

Hotuta T., Hiraoka S., Murakawa K., Takiguchi S., Kusano J.,

Watanabe M., Fujimori K., Tanai H., Ishida M., Yamashita H., Chiba Y.,

Sugiyama T., Irie R., Otsuki T., Sato H., Wakamatsu A., Ishii S.,

Yamamoto J., Isono Y., Kawai-Hio Y., Saito K., Nishikawa T.,

Kimura K., Matsuo K., Nakamura Y., Sekine M., Kikuchi H., Kanda K.,

Wagatsuma M., Takahashi-Fujii A., Oshima A., Sugiyama A., Kawakami B.,

Suzuki Y., Sugano S., Nagahari K., Masuho Y., Nagai K., Isogai T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Hypothetical SEQUENCE 2:
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TISSUE=Eye;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q96B36
                                         "NEDO human cDNA sequencing project.";
Submitted (OCT-2001) to the EMBL/GenBank/DDBJ databases.
EMBL; AKOS5511; BAB70937.1; -.
InterPro; IPR002965; Prich extensn.
                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q96NG2
                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                               iomo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                               ypothetical protein FLJ30949.
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8; Conserv
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8; Conserv
                     PR01217; PRICHEXTENSN
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256 AA; 2
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Primates;
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100.0%; Pred. N
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Last annotation updat
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Last annotation update)
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Pred. No
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                                                                                                                                                                                                                                                                                                                                                                                                  Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F6CB195CBB54326C CRC64;
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18;
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RESULT 17
Q9D1F4
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Best Local S
Matches
            A Kawai J. Shinagawa A., Shibata K., Yoshino M., Itoh M., Ishii Y.,
A Arakawa T., Hara A., Fukunishi Y., Konno H., Adachi J., Fukuda S.,
A Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
A Alzawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
A Saito T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Salto R.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kuehl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
A Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
Balake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
B Blake J., Boffelli D., Hofmann M., Carninci P., de Bonaldo M.F.,
A Gustincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
A Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local
                                                                                                                                                                                                                                                                                                                             O9D1F4 PRELIMINARY;
Q9D1F4:
O1_JUN_2001 (TrEMBLrel. 1
01_JUN_2001 (TrEMBLrel. 1
01_JUN_2001 (TrEMBLrel. 1
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Q96IK7;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation updat
Similar to RIKEN cDNA 1110012J22 gene.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Strausberg R.;
Submitted (MAY-2001) to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human)
                                                                                                                                                                                         MEDLINE=21085660; PubMed=11217851;
                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN=C57BL/6J; TISSUE=Embryo;
                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                                                                             Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE=Skin;
Lyons P., Marchionni L., Nordone P., Ring B., Ring
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                379
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8; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 256 AA; 27409 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
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                                                                                                                                                                                                                                                               Chordata;
Rodentia;
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17,
17,
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Sciurognathi; Muridae;
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RESULT 19
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STRAIN-BA3(2) / M145;

MEDLINE=21996410; PubMed=12000953;

MEDLINE=21996410; PubMed=12000953;

Bentley S.D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L.,

Thomson N.R., James K.D., Harris D.E., Quail M.A., Kieser H.,

Harper D., Bateman A., Brown S., Chandra G., Chen C.W., Collins M.,

Cronin A., Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S.,

Huang C.-H., Kleser T., Larke L., Murphy L., Oliver K., O'Neil S.,

Rabbinowitsch E., Rajandream M.A., Rutherford K., Rutter S.,

Rabbinowitsch E., Rajandream M.A., Rutherford K., Rutter S.,

Rabbinowitsch E., Rajandream M.A., Rutherford K., Rutter S.,

Rabbinowitsch E., Rajandream M.A., Burres R., Squares S., Taylor K.

Seeger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.

Wietzorrek A., Woodward J., Barrell B.G., Parkhill J.,
                   P79458;
P79458;
01-MAY-1997
01-MAY-1997
01-MAR-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9EWP8;
                                                                                                                                                                                                                                                                                                                                                                                     "Complete genome sequence of the model actinomycete Streptomyces coelicolor A3(2).";

Nature 417:141-147(2002).

EMBL; AL939132; CAC17496.1; -.

Interpro; IPR000515; BPD transp.

Pfam; PF00528; BPD transp; 1.

Complete proteome.
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EMBL; AK00338; BAB22905.1; -.

EMGD; MGI:1914855; 1110012022Rik.

InterPro; IPR002965; P rich extensn.

PRINTS; PR01217; PRICHEXTENSN.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
Streptomycineae; Streptomycetaceae; Streptomyces.
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5, 20;
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RESULT 20
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Best Local
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ProDom; PD000050; MHC I; 1.
SMART; SM00407; IGC1; 1.
PROSITE; PS50835; IG_LIKE; 1.
PROSITE; PS00290; IG_MHC; 1.
Glycoprotein; Transmembrane,
SEQUENCE 346 AA; 39057 MW;
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01-MAR-2002 (TrEMBLrel. 20,
01-MAR-2002 (TrEMBLrel. 20,
01-JUN-2002 (TrEMBLrel. 21,
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                                                                                                                                                                            STRAIN=16M / ATCC 23456 / Biotype 1;

MEDLINE=20020109; PubMed=11756688;

DelVecchio V.G. Kapatral V., Redkar R.J., Patra G., Mujer C., Los
Ivanova N., Anderson I., Bhattacharyya A., Lykidis A., Reznik G.,
Ivanova N., Larsen N., D'Souza M., Bernal A., Mazur M., Goltsman
Selkov E., Elzer P.H., Hagius S., O'Callaghan D., Letesson J.-J.,
Haselkorn R., Kyrpides N., Overbeek R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Caudata; Salamandroidea; Ambystomatidae;
Ambystoma.
                                     Pfam; PF03594; BenE; TIGRFAMS; TIGRO0843;
                                                                                            "The genome sequence of the facultative intracellular pathogen brucella melitensis.";
Proc. Natl. Acad. Sci. U.S.A. 99:443-448(2002).
EMBL; AE009634; AAL53193.1; -.
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-i- FUNCTION: INVOLVED IN THE PRESENTATION OF FOREIGN ANTIGENS TO THE IMMUNE SYSTEM (BY SIMILARITY).

-i- SUBUNIT: DIMER OF ALPHA CHAIN AND A BETA CHAIN (BETA-2-MICROGLOBULIN) (BY SIMILARITY).
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                                                                                                                                                                                                                                                                                                                                                                                 Brucellaceae, Brucella.
                                                                                                                                                                                                                                                                                                                                                                                                  Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                       Brucella melitensis
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InterPro; IPR003597; Ig_c1.
InterPro; IPR003006; Ig_MHC.
InterPro; IPR001039; MHC_I.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDLINE=97190244; PubMed=9038100;
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39296 MW;
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Q8FXX9;
01-MAR-2003
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01-MAR-2002
01-MAR-2002
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                Nakazaki N., Shimpo S., Sugimoto M., Takazawa M., Yamada M., Yasuda M., Tabata S.; Yasuda M. Tabata S.; "Complete genomic sequence of the filamentous nitrogen-fixing Cyanobacterium Anabaena sp. strain PCC 7120."; DNA Res. 8:205-213(2001).
                                                                          MEDLINE=21595285; PubMed=11759840; KKAneko T., Nakamura Y., Wolk C.P., K. Watanabe A., Iriguchi M., Ishikawa A. Kishida Y., Kohara M., Matpumoto M., Nakazaki N., Shimpo S., Sugimoto M.,
                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                       Hypothetical protein Alr0776
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=22247741; PubMed=12271122; Paulsen I.T., Seshadri R., Nelson K.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=29461;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bacteria; Proteobacteria;
Brucellaceae; Brucella.
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M., Matsuno /
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, Kawashima
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                                                                                                                              Sasamoto
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                                                                                              K., Kimura T.,
Muraki A.,
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Q96QH1
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Q8N6Q3
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Best Local S
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Q96QH1;
01-DEC-2001
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SIGNAL
CHAIN.
                                                                 Receptor.
SEQUENCE
                                                                                                              TISSUE=Colon, and Kidney;
Strausberg R.;
Submitted (MAY-2002) to the
                                                                                                                                                                                                                                                       Q8N6Q3;
01-OCT-2002 (TrEMBLrel. 22,
01-OCT-2002 (TrEMBLrel. 22,
01-OCT-2002 (TrEMBLrel. 22,
Polycythemia rubra vera 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
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Mammalia; Eutheria;
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01-DEC-2001
                                                                                                                                                             SEQUENCE FROM
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                                                                                                EMBL; BC029167;
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milarity 100.0%;
Conservative 0
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ilarity 100.0%;
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and Kidney;
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437
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Primates;
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MEDIJINE=21357611; PubMed=11465086; Kissel K., Santoso S., Hofmann C., Stroncek D., Bux J.; Kissel K., Santoso S., Hofmann C., Stroncek D., Bux J.; "Molecular basis of the neutrophil glycoprotein NB1 (CD177) involved in the pathogenesis of immunenneutropenia and transfusion reactions.' Eur. J. Immunol. 31:1301-1309(2001).
                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                         , Last sequence update)
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cell surface receptor.
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Score 8; DB 4; Pred. No. 29; 0; Mismatches
                                                                                               EMBL/GenBank/DDBJ
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823D4F784986A42F CRC64;
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Catarrhini;
                                                        CC4DE4EC1E7CFC4B CRC64;
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27;
               DB 4;
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i; Hominidae;
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Matches 8
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MEDLINE=21470413; PubMed=11586360;

Parkhill J. Wren B.W., Thomson N.R., Titball R.W., Holden M.T.G.,

Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L.,

Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M.,

Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G.,

Feltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V.,

Leather S., Moule S., Oyston P.C.F., Quail M., Rutherford K.,

Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.;

"Genome sequence of Yersinia pestis, the causative agent of plague

Nature 413:523-527(2001).
                                                                                                                                                                                                                                                                                                                                                         Q8ZFW8;
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01-MAR-2001 (
Cell surface
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SEQUENCE FROM N.A.
STRAIN-KIMS / Biovar Mediaevalis;
STRAIN-KIMS / Biovar Mediaevalis;
MEDLINE=22137863; PubMed=12142430;
Deng W., Burland V., Plunkett G. III, Boutin A., May
Perna N.T., Rose D.J., Mau B., Zhou S., Schwartz D.C
Fethereton J.D., Lindler L.E., Brubaker R.R., Plano
Straley S.C., McDonough K.A., Nilles M.L., Matson J.
Perry R.D.;
                                                                                                                                                                                                                                                                          Yersinia pestis.
Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                                               Amino acid permease (Putative YPO1557 OR Y2612.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Temerinac S., Klippel S., Roeder S
Meinhardt G., Pahl H.L.;
"Cloning of PRV-1, a novel member
Submitted (APR-1999) to the EMBL/(
EMBL; AF146747; AAG00895.1; -.
                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                Enterobacteriaceae;
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01-MAR-2003
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Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Primates;
                                                                                                                                                                                                                                                   NCBI_TaxID=632;
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16,
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                                                                                                                                                                                                                                                                                                            symporter).
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                                 Mayhew G.F., D.C.,
          no G.V.
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Briese T.,
Pitlik S.,
                  STRAIN=B956;
MEDLINE=21992730; PubMed=11996693;
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Q8G7P9;
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EMBL; AJ414149; CAC90379.1;
EMBL; AE013863; AAM86167.1;
EMBL; AE013863; AAM86167.1;
                                                                                   Polyprotein (Fragment). West Nile virus (WN).
                                                                                                                                                                                                                                                                                                                                                                                                                   Bifidobacterium longum.
Bacteria; Actinobacteria;
                                                                  Flavivirus
                                                                          Viruses; ssRNA positive-strand
                                                                                                                                   Q8JZ36;
                                                                                                                                           Q8JZ36
                                                                                                                                                                                                                                                                                        "The genome sequence of Bifidobacterium longum reflects to the human gastrointestinal tract."; Proc. Natl. Acad. Sci. U.S.A. 99:14422-14427(2002).
EMBL; AE014637; AAN24052.1; -.
                                                                                                                                                                                                                                                                                                                                                                                               Bifidobacteriaceae;
NCBI_TaxID=216816;
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Pfam; PF00324; aa_permeases; 1
                                     SEQUENCE FROM N.A.
                                                       NCBI_TaxID=11082;
                                                                                                                                                                                                                                                                      Hypothetical protein;
SEQUENCE 468 AA; 49
                                                                                                                                                                                                                                                                                                                               Pessi G., Zwahlen M.-C.,
Pridmore R.D., Arigoni F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Hypothetical membrane
                                                                                                                                                                                                                                                                                                                                                 Schell M.A., Karmirantzou M.,
                                                                                                                                                                                                                                                                                                                                                            MEDLINE=22294977; PubMed=12381787;
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Pfam; PF02832; Flavi_glycop_C; 1.
Pfam; PF00948; Flavi_NS1; 1.
ProDom; PD001556; Flavi_NS1; 1.
ProDom; PD001496; Flavi_NS1; 1.
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EMBL; AF394221; AAM21944.1;
InterPro; IPR000336; Flavi_glycoprotE.
InterPro; IPR001157; Flavi_NS1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (APR-1999) to the EMBL/GenBank/DDBJ databases EMBL; AF146082; AAD31720.1; -. HSSP; P14336; ISVB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Miller B.R., Nasci R.S., Godsey M.S., Savage H.M., Lutwama J.J., Lanciotti R.S., Peters C.J., Gubler D.J.; Lanciotti R.S., Peters C.J., Gubler D.J.; First field evidence for natural vertical transmission of West Nile virus in Culex univittatus mosquitoes from Rift Valley Province,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A. STRAIN-KN3829;
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Nile virus epidemic.";
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Pfam; PF00869; Flavi_glycoprot; 1.
Pfam; PF02832; Flavi_glycop_C; 1.
ProDom; PD001556; Flavi_glycoprotE; 1.
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Emerging Infect. Dis. 7:0-0(2001).
EMBL; AF346310; AAK62757.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Viruses; ssRNA positive-strand
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Viruses; ssRNA positive-strand viruses, Flavivirus.
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EMBL; AF346313; AAK62760.1; -.
InterPro; IPR000336; Flavi_glycoprotE.
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pfam; PF02832; Flavi_glycop_C; 1.
probom; PD001556; Flavi_glycoprotE; 1.
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Emerging Infect. Dis. 7:0-0(2001).
EMBL; AF346316; AAK62763.1; .
InterPro; IPR000336; Flavi_glycoprot; 1.
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Pfam; PF02832; Flavi_glycop_C; 1.
ProDom; PD001156; Flavi_glycoprotE; 1.
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Ebel G.D., Dupuis A.P. II, Ngo K., Nicholas D., Kauffman Jones S.A., Young D., Maffel J., Shi P.-Y., Bernard K., Funarial Genetic Characterization of West Nile Virus Stra
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EMBL, AF346315; AAK62762.1;
InterPro; IPR000336; Flavi_glycoprotE.
Pfam; PF00859; Flavi_glycoprot; 1.
Pfam; PF02832; Flavi_glycop_C; 1.
ProDom; PD001556; Flavi_glycoprotE; 1.
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Viruses; ssRNA positive-strand viruses,
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Ebel G.D., Dupuis A.P. II, Ngo K.,
Jones S.A., Young D., Maffei J., S
"Partial Genetic Characterization
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ei J., Shi P.-Y., Bernard F
ization of West Nile Virus
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Bernard K., Kramer L.D.;
ile Virus Strains, New Yo
                                       <u>.</u>
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                                                                            Length 501;
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New York
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Q91MB2
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Q91MC2
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Q91MC2; PRELIMINARY;
01-DEC-2001 (TrEMBLrel. 19,
01-DEC-2001 (TrEMBLrel. 19,
01-MAR-2002 (TrEMBLrel. 20,
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NON_TER
SEQUENCE
                 SEQUENCE
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Pfam; PF02832; Flavi_glycop_C; 1.
ProDom; PD001556; Flavi_glycoprotE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=00-3282;
Ebel G.D., Dupuis A.P. II, Ngo K., Nicholas
Jones S.A., Young D., Maffel J., Shi P.-Y.,
"Partial Genetic Characterization of West Ni
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
                                                                 InterPro; IPR000336; Flavi_glycoprotE.
Pfam; PF00869; Flavi_glycoprot; 1.
Pfam; PF02832; Flavi_glycop_C; 1.
ProDom; PD001556; Flavi_glycoprotE; 1.
                                                                                                                                                             Emerging Infect. Dis. 7:0-0(2001). EMBL; AF346309; AAK62756.1; -.
                                                                                                                                                                                                                                           STRAIN=3000017;
Ebel G.D., Dupuis A.P. II, N
Jones S.A., Young D., Maffei
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AF346319; AAK62766.1; -. InterPro; IPR000336; Flavi_glycoprotE.
                                                                                                                                                                                                      State,
                                                                                                                                                                                                                          "Partial
                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                            Viruses; ssRNA positive-strand
Flavivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                 West Nile virus (WN)
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Envelope glycoprotein
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01-DEC-2001
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                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=11082;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Emerging
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=11082;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Viruses; ssRNA positive-strand viruses,
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                                                                                                                                                                                                      al Genetic Characterization 2000.";
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7:
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501 AA;
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llarity 100.0%;
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               MW;
                                                                                                                                                                                                                     Ngo K., Nicholas D., Kauffman E.B.
ei J., Shi P.-Y., Bernard K., Krame
ization of West Nile Virus Strains,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation updat
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Pred. No.
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               FF4F78F09DCD089B CRC64;
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Shi P.-Y., Bernard K., Kramer L.D.;
of West Nile Virus Strains, New York
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               501
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Kramer L.D.;
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Best Local S
Matches
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Best Local
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01-OCT-2002
01-MAR-2003
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01-DEC-2001 (TremBLrel. 19,
01-MAR-2002 (TremBLrel. 20,
Envelope glycoprotein (Fragm
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Virology 296:17-23(2002).
EMBL; AF459403; AM70028.3; -.
InterPro; IPR000336; Plavi_glycoprotE.
Pfam; PF00869; Flavi_glycoprot; 1.
Pfam; PF02832; Flavi_glycoprotE; 1.
Pf00m; PD001556; Flavi_glycoprotE; 1.
Emerging Infect. Dis. 7:0-0(2001).
EMBL; AF346314; AAK62761.1; -.
InterPro; IPR000336; Flavi_glycoprotE.
Pfam; PF00869; Flavi_glycoprot; 1.
Pfam; PF02832; Flavi_glycop_C; 1.
                                                                                                                                                                                   Ebel G.D., Dupuis A.P. II, Ngo K., N. Jones S.A., Young D., Maffei J., Shi "Partial Genetic Characterization of
                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN=3000352;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  West Nile virus (WN)
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01-DEC-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=22033887; PubMed=12036314;
Beasley D.W., Li L., Suderman M.T., Ba:
"Mouse neuroinvasive phenotype of West
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN=H-442;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               West Nile virus (WN)
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                                                                                                                                                          State, 2000."
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8; Conserv
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8; Conserv
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501 AA;
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(TrEMBLrel. 22,
(TrEMBLrel. 23,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                               positive-strand viruses,
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100.0%; Pred. No. 33
ive 0; Mismatches

    19, Last sequence update)
    20, Last annotation update)
    (Fragment).

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                                                                                                                                                                                         Nicholas D., Kauffman E.B.,
hi P.-Y., Bernard K., Kramer L.
of West Nile Virus Strains, New
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01-DEC-2001
01-MAR-2002
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pfam; PF02832; Flavi_glycop_C; 1.
ProDom; PD001556; Flavi_glycoprotE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Emerging Infect. Dis. 7:0-0(2001).
EMBL; AF346317; AAK62764.1; -.
InterPro; IPR000336; Flavi_glycoprotE.
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STRAIN=00-824;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Viruses; ssRNA positive-strand viruses,
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Ebel G.D., Dupuis A.P. II, Ngo K., Nicholas D., Kauffman E.B. Jones S.A., Young D., Maffei J., Shi P.-Y., Bernard K., Krame: "Partial Genetic Characterization of West Nile Virus Strains, State, 2000.";
                                                                                   SEQUENCE FROM N.A. STRAIN=00-3356;
                                                                                                                                              NCBI_TaxID=11082;
                                                                                                                                                                        Flavivirus
                                                                                                                                                                                       Viruses; ssRNA positive-strand
                                                                                                                                                                                                               West Nile virus (WN)
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8; Conser
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(TrEMBLrel. 19, Last sequence update)
(TrEMBLrel. 20, Last annotation updat
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53606 MW; .FF4F78EE6C22089B CRC64;
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ei J., Shi P.-Y., Bernard K., Krame
ization of West Nile Virus Strains,
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O91MCO;
01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2002 (TrEMBLrel. 20, Last annotation update)
Envelope glycoprotein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Emerging Infect. Dis. 7:0-0(2001).
EMBL; AF346311; AAK62758.1; --
InterPro; IPR000336; Flavi_glycoprotE.
Pfam; PF00869; Flavi_glycoprot; 1.
Pfam; PF02832; Flavi_glycop_C; 1.
ProDom; PD001556; Flavi_glycoprotE; 1.
NON TEP
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STRAIN-3000548;
EDD1 G.D., Dupuis A.P. II, Ngo K., Nicholas D., Kauffman E.B.,
Jones S.A., Young D., Maffei J., Shi P.-Y., Bernard K., Kramer L.D.;
"Partial Genetic Characterization of West Nile Virus Strains, New York
State, 2000.";
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Viruses; sBRNA positive-strand viruses, no DNA stage; Flaviviridae;
Flavivirus.
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486 LAVGGVLL 493
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486 LAVGGVLL 493
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                                                                                                                                                                                                                                                                                                                                                                               501 AA; 53620 MW; FF4F78F09DCD089B CRC64;
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Result
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Maximum Match 100%
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TELEX: 425066 CURTMS
INFORMATION FOR SEQ ID NO: 9
SEQUENCE CHARACTERISTICS:
LENGTH: 628 amino acids
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sequence Z, Appli	Sequence 8, Appli	Sequence 6, Appli	Sequence 1, Appli	Sequence 3, Appli	Sequence 3, Appli	Sequence 3, Appli	Sequence 22, Appl	Sequence 22, Appl	Sequence 2, Appli	Sequence 2, Appli	Sequence 11, Appl	Sequence 5645, Ap	Sequence 62, Appl	Sequence 62, Appl	Sequence 62, Appl	Sequence 62, Appl	Sequence 62, Appl

ALIGNMENTS

## Sequence 9, Application US/08257073 Patent No. 5766597 CURRENT APPLICATION NUMBER: US/08/257,073 FILING DATE: 09-UN-1994 CLASSIFICATION NUMBER: US/08/257,073 FILING DATE: 09-UN-1994 PRIOR APPLICATION: 424 PRIOR APPLICATION NUMBER: US 08/075,783 FILING DATE: 11-UN-1993 FILING DATE: 11-UN-1993 PRIOR APPLICATION NUMBER: US 07/852,305 FILING DATE: 18-MAR-1992 PRIOR APPLICATION NUMBER: US 07/672,183 PILING DATE: 18-MAR-1992 PRIOR APPLICATION NUMBER: US 07/672,183 FILING DATE: 20-MAR-1991 ATTORNEY/AGENT INFORMATION: NAMB: Frommer, William S. REGISTRATION NUMBER: 25,506 REGISTRATION NUMBER: 454310-2570 GENERAL INFORMATION: APPLICANT: PROJECTI, Enzo APPLICANT: Trine, John A. APPLICANT: Tine, John A. TITLE OF INVENTION: MALARI COMPUTER READABLE FORM: MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible COMPUTER: DC-DOS/MS-DOS OPERATING SYSTEM: PC-DOS/MS-DOS CORRESPONDENCE ADDRESS: ADDRESSEE: Curtis, Morris & Safford, P.C. STREET: 530 Fifth Avenue, 25th Floor NUMBER OF SEQUENCES: MALARIA RECOMBINANT POXVIRUS VACCINE COUNTRY: UZIP: 10036 New York New York THE STATES OF AMERICA Charles Version #1.30

TELECOMMUNICATION INFORMATION: TELEPHONE: (212) 840-3333

MOLECULE TYPE:

STRANDEDNESS: TYPE: amino acid

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Patent No. 6120770
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                                                                                                                                                                                                                                                             APPLICANT: Adams, John H
APPLICANT: Dalton, John P
APPLICANT: Kappe, Stefan
TITLE OF INVENTION: Plasmodium Proteins Useful for Preparing
TITLE OF INVENTION: Vaccine Compositions
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
COMPUTER: ISM PC COMPATION
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
                                                                                                                                                                                                   CITY: Indianapolis
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                                                                                                                                                                                Indiana
                                                                                                                                                                                                                      E: Barnes & Thornburg
                                                                                                                                                               USA
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US/08/929,329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            626
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Best Local Similarity
Thes 87; Conserva
                                                                                                                                                                                                                                                  RESULT 3
US-08-327-832-5
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                                                                                                                                                                                                       Sequence 5, Application US/08327832 Patent No. 5840832
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TELEPHONE: (317) 231-7745
TELEPAX: (317) 231-7433
INFORMATION FOR SEQ ID NO: 5:
                                                                                                                                                                                    GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ANTI-SENSE: NO ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: Breen, John P
REGISTRATION NUMBER: 38,
REFERENCE/DOCKET NUMBER:
                                                                              APPLICANT: Ono, Santa J.

APPLICANT: Strominger, Jack L.

TITLE OF INVENTION: Transcription Factor Regulating MHC

TITLE OF INVENTION: Expression, cDNA and Genomic Clones Encoding

TITLE OF INVENTION: Retroviral Expression Contracts Thereof
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                                        CORRESPONDENCE ADDRESS:
                                                           NUMBER OF SEQUENCES:
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CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Plasmodium yoelii
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                       ADDRESSEE:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               72 NSLENARLCPNNEKĠNIYR---ĠSCPDYĠKTFSMDLDKDEYSEDFLNEISLGLLNKKLLI 128
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    E: Banner, Biro
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    Birch, M
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US-08-28-584-5
US-08-28-584-5
; Sequence 5, Application US/08828584
; Patent No. 5908762
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INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 11
TELECOMMUNICATION INFORMATION:
TELEPHONE: 20-2 508-9153
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
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District of Columbia
                                                                                                                                                                          MVIC----SEASSTYQRIAAISMASKITDMQLGGSVEISKLITK-KEVHQARLECDEEC
                                                                                                                                                                                                       SVDCTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQS 499
                                                                                                                                                                                                                                                                                                                                                                                                                        HTYPLTSQASWNDWWP-----
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GY: linear
                                                                                                     SALERKKRLAEAFHISEDSDPFNIRSSGSKFSDSLKEDARKD
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                                                                                                                                                                                                                                                                            LSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGACDVQACK-RQKTSCVGGQIQST
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           CPLNCGRKLRCGLHRCEEPCHRGNC---
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Pred. No. 0.23;
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
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NAME: POSOTSKe, Laurence H.
REGISTRATION NUMBER: 34,698
REFERENCE/DOCKET NUMBER: 1107.46362
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COMPUTER READABLE FORM:
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TITLE OF INVENTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
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CITY: Washington, D.c.
CMATE: District of Columbia
CMATE: A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                OPERATING SYSTEM:
SOFTWARE: PatentI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: US/08/828,584 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER:
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XGY: linear
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                                                      SVDCTADEQNECG$NTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQS
                                                                                                                                                                             LSEETPNFIIPSNPSVTPPTPETALOCTADKFPDSFGACDVQACK-RQKTSCVGGQIQST 439
                                                                                                                                                                                                                                                                                                        --VGR----NYGFYYVDTT---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C----
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1001 G Street, N.W.
ashington, D.C.
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Strominger, Jack L.
Strominger Stro
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SYSTEM: PC-DOS/MS-DOS
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--SEASSTYQRIAAISMASKITDMQLGGSVEISKLITK-KEVHQARLECDEEC
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                                                                                                                          PCKQPCTTPRADCGHPCMAPCHTSS--PCPVTACKAKVELQCECGR-RKE
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Pred. No. 0.23;
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RESULT 5
US-08-484-438-8
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APPLICANT:
APPLICANT:
APPLICANT:
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                                                                                                                                                                               Query Match
Best Local Similarity
Matches 107; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: (FILING DATE: 07-JUN-1
CLASSIFICATION: 530
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICATION NUMBER: 08/323,442
FILING DATE: 14-0CT-1994
APPLICATION NUMBER: US 08/150,704
FILING DATE: 10-NOV-1993
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US 07/981,165
FILING DATE: 24-NOV-1992
CLASSIFICATION: 530
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OPERATING SYSTEM: PC-DOS/MS-DOS
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138 PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS 193
                                                                             256 LHFNHSGIC-----ELHCPALVTYNTDTFESMPN-----
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10036-2711
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1155 Avenue of the Americas
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Hellstr m, Karl E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (212) 869-8864/9741
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Siegall, Clay B.
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Pred. No. 0.64
45; Mismatches
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US-08-625-101-2
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       ; MOLECULE TYPE:
US-08-625-101-2
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Patent No. 5869445
                                                                                                                                                               TELEFAX: (206) 682-60 INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Cheever, Martin A.
APPLICANT: Disis, Mary L.
APPLICANT: Cheever, Martin A.
APPLICAN
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MEDIUM TYPE: Ploppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
                                                                                                            SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
                                                                                                                                                                                                                                       NAME: Sharkey, Richard G. REGISTRATION NUMBER: 32,629 REFERENCE/DOCKET NUMBER: 92: TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                         ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                   CURRENT APPLICATION DATA: US APPLICATION NUMBER: US
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                                       IOPOLOGY: line--
                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
                                                                                                                                                                                                               TELEPHONE:
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NO: 2:
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Patent No. 5877305
GENERAL INFORMATION:
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Best Local Similarity
Matches 108; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: Edmund R. Pitcher, Testa, Hurwitz,
STREET: Exchange Place, 53 State Street
                                                                                                                                                                                                                                                                                                                                                                APPLICANT: Houston, L. L. APPLICANT: Ring, David B. TITLE OF INVENTION: BiosyntTITLE OF INVENTION: Marker NUMBER OF SEQUENCES: 16
FILING DATE:
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 07/831,967
FILING DATE: 06-FEB-1992
                                                                                             SOFTWARE: PatentIn Release #1.0, Version CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/356,786
                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                        CITY: Boston
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htive 43; Mismatches 174;
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US-08-467-083-68
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                                                                                                                                                                                                                            Sequence 68, Application US/08467083
Patent No. 5726023
GENERAL INFORMATION:
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                                                                                                                             APPLICANT: Cheever, Martin A. APPLICANT: Disis, Mary L. TITLE OF INVENTION: IMMUNE RETITLE OF INVENTION: FOR DIAGNUTITLE OF INVENTION: HER-2/NEU
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                                                                                           NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
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REGISTRATION NUMBER: 27
REFERENCE/DOCKET NUMBER:
                                                     STREET:
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                                       CITY: Seattle
                                                                           ADDRESSEE:
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                                                         6300 Columbia Center,
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22.5%; Pred. No. 0.64;
ative 43; Mismatches 174; Indels 15
                                                                                                                                 IMMUNE REACTIVITY TO HER-2/NEU PROTEIN FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH HER-2/NEU ONCOGENE IS ASSOCIATED
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Best Local S
Matches 108
Sequence 68, Application Patent No. 5801005
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0,
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920010.448C2
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
TELEPAX: (206) 682-6031
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LENGTH: 1255 amino aci
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ATTORNEY/AGENT INFORMATION:
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PRIOR APPLICATION NUMBER:
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08; Conservative
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06-JUN-1995
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22.5%; Pred. No. 0.81;
ative 43; Mismatches
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                    US/08414417B
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Matches
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ZIP: 98104-7092
ZIP: 98104-7092
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: Floppy disk
MEDIUM TYPE: PLOS/MS-DOS
MEDIUM TYPE: PC-DOS/MS-DOS
MEDIUM TYPE: 
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ATTORNEY/AGENT INFORMATION:
NAME: Sharkey, Richard G
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SOFTWARE: PATENTIA Release #1.0, V.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/414,417B
FILING DATE: 31-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               / Match 3.5%; Score 103; DB 1; Length 1255;
Local Similarity · 22.5%; Pred. No. 0.81;
nes 108; Conservative 43; Mismatches 174; Indels 15
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                                                              PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL
                                                                                                                                 HCLPCHPE-CQPQNGSVTCFGPE-ADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                                                                                                                                                   SLSEETPNFIIPSNPSVTPPTPETALQCTAD-----
                                                                                                                                                                                                                                                                                                                                 QPHSGGVGRNYGFYYVDT-----TGEGKCALSDQ------VPDCLVSDSAAVSYTAAG
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PDEEGAC--QPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVL
                                                                                                                                                                                                                                                               RPEDECVGEGLACHQLCARCHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
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Disis, Mary L.
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00 Columbia Center,
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682-6031
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US-08-486-348A-68
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Best Local :
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
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APPLICANT: Disis, Mary
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Local Similarity 22.5%;
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REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 92
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                                                                                                                                          QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS 457
                                                                                                                                                                              SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC 276
                                                                                                                                                                                                                --RVCYGLGMEHLREVRAVTSANIQEFAĞCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
RPEDECVGEGLACHQLCARCHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
                                                                     L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH-----QAL-----LHTAN 498
                                                                                                         LDYTELTDTVIERVESKAQCWVKTFENDGVASDQ----PHTYPLTSQASWNDWWPLHQSD 332
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US-08-468-545B-68
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFTON: IBM PC compatible operating System: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, Ve CURRENT APPLICATION DATA:
APPLICATION UMBER: US/08/469 TELLING DATE: 06-TTP.
                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
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LENGTH: 1255 amino.aci
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REFERENCE/DOCKET NUMBER: 920
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
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NAME: Sharkey, Richard G
REGISTRATION NUMBER: 32,
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COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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APPLICANT: Disis, Mary L.
TITLE OF INVENTION: IMMUNE REACTIVITY TO HER-2/neu PROTEIN
TITLE OF INVENTION: FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
TITLE OF INVENTION: HER-2/neu ONCOGENE IS ASSOCIATED
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CORRESPONDENCE ADDRESS:
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ເກ. 58767)
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                                                                                    SVKGEPPDLTWYCFKPRK 232
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RESULT 12
US-08-466-680B-68
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Best Local S
Matches 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 98104-7092
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, V
                                                                                                                                                                                                                                                    TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 6
SEQUENCE CHARACTERISTICS:
LENGTH: 1255 amino acids
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CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                   NAME: Sharkey, Richard G.
REGISTRATION NUMBER: 32,629
REFERENCE/DOCKET NUMBER: 920
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/0:
FILING DATE: 06-JUN-1995
CLASSIFICATION: 424
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Seattle
STATE: Washing
COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                      TYPE: amino acid
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PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS 193
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6300 Columbia Center, 701
                                                                                                                                                                                                                                                           1255 amino acids
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                                                                                                                 3.5%; Score 103; DB 3; ilarity 22.5%; Pred. No. 0.81; Conservative 43; Mismatches 174
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FOR DIAGNOSIS AND TREATMENT OF MALIGNANCIES IN WHICH THE
HER-2/neu ONCOGENE IS ASSOCIATED
                                       ----ELHCPALVTYNTDTFESMPN----
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                                                                                                                       174;
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                                                                                                                                                          Length 1255;
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                                           - PEGRYTFGASCVT
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-527-487-2
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Patent No. 6528060
GENERAL INFORMATION:
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SOFTWARE: PatentIn Ver.
SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 3.5%; Score 103; DB 4; Length 1255; Best Local Similarity 22.2%; Pred. No. 0.81; Matches 107; Conservative 44; Mismatches 174; Indels 15
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TITLE OF INVENTION: HER2 ANTIGENIC PEPTIDES
FILE REFERENCE: 126881309200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/527,487
CURRENT FILING DATE: 2000-03-16
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                                                                                  QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
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        L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH-----QAL-----LHTAN
                                                                                                                             SVTENHHLIYGSAYVGENPDAF -- ISKCPN-QALRG----
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Query M Best Lo Matches	HYPOT ANTI- FRAGM FRAGM ORIGI ORG US-08-929-	MO	INFO		CU		0		CNII	APP	; Pateni ; GENE	RESULT 14 US-08-929-329-	р	ş	дb	ş	ß 8	B 8
Query Match  3.5%; Score 102.5; DB 3; Length 934;  Best Local Similarity 20.5%; Pred. No. 0.56;  Best Local Similarity 20.5%; Pred. No. 0.56;  Matches 89; Conservative 49; Mismatches 150; Indels 147; Gaps 23;  34 TLSASTSGNEFQANV-EMKTFMERFULTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIW 92	HETICAL: N SENSE: NO SENT TYPE: ENT SOURCE: NAL SOURCE: ANISM: Pla	OURNCE CHARACTERISTICS: LENGTH: 934 amino acids TYPE: amino acid STRANDEDNESS: TOPOLOGY: unknown LECULE TYPE: peptide	0: 74 BE	 B	LICATION DATA: ON NUMBER: US/08/929,329 TE:	MEDIUM TYPE: FLODDY GISK COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0, Version #1.30	COUNTRY: USA ZIP: 46204 COMPUTER READABLE FORM:	ADDRESSEE: Barnes & Thornburg STREET: 11 S Meridian CITY: Indianapolis	TITLE OF INVENTION: VARBUGGIUM PROCEINS USERUI FOR PREPARING TITLE OF INVENTION: Vaccine Compositions NUMBER OF SEQUENCES: 23 CORRESPONDENCE ADDRESS:	Dalton, John P  Kappe, Stefan  Thirdran	RMATION:	14 29-329-6 200 6 Application (6/08020220	668 G 668	473 G 473	617 PDEEGACQPCPINCTHSCVDLDDKGCPAEQRASPLTSIVSAVVGILLVVVL 667	413 PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL 472	380 SLSEETPNFIIPSNPSVTPPTPETALQCTAD-;	333 QPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAG 379 
TELECOMMUNICATION INFORMATION: TELEPHONE: (301) 309-8504 TELEPAX: (301) 309-8439 INFORMATION FOR SEQ ID NO: 6: SEQUENCE CHARACTERISTICS: LENGTH: 467 amino acids TYPE: amino acid	APPLICATION NUMBER: 60/0 FILING DATE: Dec-9-97 CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION: NAME: BROOKES, ANDERS A. REGISTRATION NUMBER: 36, REGISTRATION NUMBER: 36,	CLA PRIOR PRIOR FIL CLA	; OPERATING SYSTEM: PC-D; SOFTWARE: Patentin Rel; CURRENT APPLICATION NATA: APPLICATION NUMBER: US; FILING DATE: May-29-98	; ZIP: 2 ; COMPUTER ; MEDIUM ; COMPUTE	~ ~ ~	; NUMBE ; CORRE ; ADD	GENERAL INFORMATION: APPLICANT: NI, et a. TITLE OF INVENTION:	RESULT 15 US-09-086- ; Sequence	Дb	\$ B	\$ 8	당 タ	皮	S	뭣	Ş	B 8	B 8

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; TOPOLOGY: 11; MOLECULE TYPE: US-09-086-483A-6
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Best Local Similarity
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TITLE OF INVENTION: Human Tumor Necrosis Factor Receptor TR10
FILE REFERENCE: PF379P1
CURRENT APPLICATION NUMBER: US/09/580,212
CURRENT FILING DATE: 2000-05-26
PRIOR APPLICATION NUMBER: 60/136,786
PRIOR APPLICATION NUMBER: 60/136,786
PRIOR FILING DATE: 1999-05-28
PRIOR APPLICATION NUMBER: 60/142,563
                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS:
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PRIOR APPLICATION NUMBER:
PRIOR FILING DATE: 1999-0
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VCCCIGSGCGGDPKCMDRVCFWRLGLLRGPGAEDNAHNEILSNADSLSTFVSEQQMESQE
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Pred. No. 0.23;
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/013,895A
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APPLICANT: Ni, Ji
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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ATTORNEY/AGENT INFORMATION:
NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,68
REFERENCE/DOCKET NUMBER: 1
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CORRESPONDENCE ADDRESS:
ADDRESSEE: HUMAN GENOME SCIENCES,
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TITLE OF INVENTION:
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APPLICANT: Pan, James G.
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Dixit, Vishva M.
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Patent No. 64618;
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Best Local Similarity
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CURRENT FILING DATE: 2000-05-05
PRIOR APPLICATION NUMBER: US 60/132,922
PRIOR FILING DATE: 1999-05-06
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TYPE: PRT
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ORGANISM: Homo sapiens
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APPLICANT:
APPLICANT:
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                   TITLE OF INVENTION: Death Domain Containing Receptor 4 (DR4: Death TITLE OF INVENTION: Receptor 4), Member of the TWF-Receptor TITLE OF INVENTION: Superfamily and Binding to Trail (AP02-L) NUMBER OF SEQUENCES: 12
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FILING DATE: 1998-01-27
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Dixit, Vishva M.
                                                                                     Rosen, Craig A.
Pan, James G.
Gentz, Reiner L.
Dixit, Vishva M.
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Pred. No. 0.23
27; Mismatches
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US-10-039-785-1
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/448,868
FILING DATE: HEREWITH
CLASSIFICATION:
PRIOR APPLICATION:
                                                                                                                                                                                Sequence 1, Application US/10039785 Patent No. 6538938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match .3.5%;
Best Local Similarity 24.2%;
Matches 59; Conservative 2
                                                                                                                                                                GENERAL INFORMATION:
       APPLICANT: Salcedo et al.

TITLE OF INVENTION: Antibodies that Immunospecifically Bind to TRAIL

TITLE OF INVENTION: Receptors

FILE REFERENCE: PF550

CURRENT APPLICATION NUMBER: US/10/039,785

CURRENT FILING DATE: 2002-05-07

PRIOR APPLICATION NUMBER: 60/369,860

PRIOR PILING DATE: 2002-04-05

PRIOR FILING DATE: 2002-04-05
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RIOR APPLICATION NUMBER: 60/341,237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS:
LENGTH: 468 amino acids
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APPLICATION NUMBER: 09/0
FILING DATE: 27-JAN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION: TELEPHONE: (202) 371-2600
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
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STREET: 9410 KEY WEST AVENUE
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Pred. No. 0.23;
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                                                                                               ; TYPE: PRT
; ORGANISM: Toxoplasma gondii
US-09-216-393B-327
                          Query Match
Best Local Similarity
Matches 42; Conserv
                                                                                                                                                                                                                                                                                 GENERAL INFORMATION:
APPLICANT: Milhausen, Michael James
APPLICANT: MILHAUSEN, MICHAEL JAMES
TITLE OF INVENTION: TOXOPLASMA GONDII PROTEINS, NUCLEIC ACID MOLECULES, AND USES THER
                                                                                                                                           SOFTWARE: PatentIn
SEQ ID NO 327
LENGTH: 571
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Best Local &
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PRIOR FILING DATE: 1997-12-19
NUMBER OF SEQ ID NOS: 366
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                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/216,393B CURRENT FILING DATE: 1998-12-18
                                                                                                                                                                                                                                                                               FILE REFERENCE: TX-1-C2
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ORGANISM: Homo sapiens
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 353 EGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETALQCTADKF 412
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                               ; Score 97.5; DI
; Pred. No. 0.8;
24; Mismatches
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Pred. No. 0.23;
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                                                              Length 571;
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                                 Indels 51;
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US-08-252-493C-9
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                                                                                                                                                                                                                                                                                                                                                                        TELEFAX: (203) 772-36
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE:
DESCRIPTION:
                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 435
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM: DOS 6.2
SOFTWARE: WORDPERFECT 6.0
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Rollins, Scott APPLICANT: Rother, Russell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: FILING DATE: June 1
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                                                                                                                                                                                                                                                                                                            TYPE: amino acid
STRANDEDNESS: Si
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                                                                                                                                                                                 Local
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                                                                   286 V-----
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                                                                                                                                                               Similarity
73; Conserv
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                                   VGHPQNGDVSCNHSSIGEFAYKSTCHFTCAEGFGLQG--PAQIECTAQGQWTQQAPVCKA
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25 Science Park,
                                                                                                                                                                                                                                                                                                                                             484 amino acids
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VENTION: PORCINE E-SELECTIN
                                                                                                                                                                  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PC compatible
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   -DQPHSGGVGRNYGFYYVDTTGE----GKCALSDQVPDCLVSDSAAVSYTAAGSL 381
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                                                                                                                                                                                                                                               cDNA to mRNA predicted amino acid sequence of Porcine E-selectin
                                                               ----IERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQS
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ID NO: 9:
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Pred. No. (
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parent No. 6040428
; Patent INFORMATIO
GENERAL INFORMATIO
APPLICANT: Roth
APPLICANT: Roth
                                                                                                                                   Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                              TELEFAX: (203) 772-3655
INFORMATION FOR SEQ ID NO: 9:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                 TOPOLOGY: Linear MOLECULE TYPE: cDNJ DESCRIPTION: pred
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: PC compatible OPERATING SYSTEM: DOS 6.2 SOFTWARE: WORDERFECT 6.0 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                          ATTORNEY/AGENT INFORMATION:
NAME: Fidel, Seth A.
REGISTRATION NUMBER: 38,449
REFERENCE/DOCKET NUMBER: AL:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: 25 -- CITY: New Haven
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION:
                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                     TYPE: amino acid
STRANDEDNESS: Sir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                               DESCRIPTION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION:
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 V-----IERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQS 331
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Evans, Mark J.
Matis, Louis A.
VENTION: PORCINE E-SELECTIN
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                                                                                                                   Conservative
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                                                                                                                                                                                                             cDNA to mRNA
predicted amino acid sequence
Porcine E-selectin
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                                                                                                                                                                                                                                                                                       Single
                                                                                                               3.3%; Score 97; DB 3
22.3%; Pred. No. 0.68;
tive 32; Mismatches
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US-09-310-463-4
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Sequence 4, Application US/08842248A Patent No. 6448035 GENERAL INFORMATION:
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NUMBER OF SEQ ID NOS: 39
SOFTWARE: PATENTIN VEr. 2.0
SEQ ID NO 4
LENGTH: 652
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Best Local S
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CURRENT APPLICATION NUMBER: US/09/310,463A
CURRENT FILING DATE: 1999-05-12
EARLIER APPLICATION NUMBER: 08/842,248
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APPLICANT: Anderson, Dirk M.
APPLICANT: Borges, Luis
TITLE OF INVENTION: Family of Immunoregulators Designated Leukocyte Immunoglobulin-
TITLE OF INVENTION: Like Receptors (LIR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: human
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                                                                                                                                                                                                                                                   GVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSD--LMQEAEPSFWDE 522
                                                                                                                                                                                                                                                                                                                            LQCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVG 464
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                                                                                                                                   QEENL 533
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20.4%; Pred. No. 1.4;
ative 32; Mismatches 9;
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                                                                                                                                           Sequence 8,
Patent No. '
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Best Local Similarity
                                                                                                         GENERAL INFORMATION:
APPLICANT: Adams, John H
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INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 652 amino acids
               APPLICANT: Dalton, John P
APPLICANT: Kappe, Stefan
TITLE OF INVENTION: Plasmodium Proteins Useful for Preparing
TITLE OF INVENTION: Vaccine Compositions
NUMBER OF SEQUENCES: 23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Henry, Janis C.
REGISTRATION NUMBER: 34,347
REFERENCE/DOCKET NUMBER: 26'
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 587-0430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM/PC Compatible
OPERATING SYSTEM: Microsoft Word 7.0
SOFTWARE: PatentIn Release #1.0, Version
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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FILING DATE: April 24, 1997
CLASSIFICATION: 536
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STATE: WA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----YQAEFPMGPVTSAHAGTYRCYGSQSSKPYLLTHPSDPLELVVSGPSGGPSSPTTG
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                                                                                                                                                              Application US/08929329
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51 University Street
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ADDRESS:
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20.4%; Pred. No. 1.4;
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INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0,
CURRENT APPLICATION DATA:
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ORIGINAL SOURCE:
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REGISTRATION NUMBER: 38,833
REFERENCE/DOCKET NUMBER: 83
TELECOMMUNICATION INFORMATION:
TELEPHONE: (317) 231-7745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
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CLASSIFICATION:
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CITY: Indianapolis
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                                                                       372 AVSYTAAGSLSEETPNFIIPSNPSV 396
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                                                                                                               SVCLEYLFLVSPKDLYNSGRNNYWGIWAADHSVNENNIEIANGKCYHLVVKPTCVIDKEN 390
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21.1%; Pred. No. 0.87;
ative 46; Mismatches 144;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NAME: OSMAN, Richard A. REGISTRATION NUMBER: 36,627 REGISTRATION NUMBER: B9 TELECOMMUNICATION INFORMATION: TELEPHONE: (415)343-4341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version CURRENT APPLICATION DATA:
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OPERATING SYSTEM:
SOFTWARE: Patenti
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                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
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412 NFIRS 416
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                                ERVES
                                                               SAVCSFHINEIQAAFNGKFKEQSSSN---SAWLPVLNSRVPEPRPGTCVNDTSNLPDTVL
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Bentley, David R.
O'Connor, Timothy
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SYSTEM: PC-DOS/MS-DOS
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N: 514
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Pred. No. 2
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ATTORNEY AGENT INFORMATION:
NAME: Osman, Richard A.
REGISTRATION NUMBER: 36,627
REFERENCE/DOCKET NUMBER: B94-
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION:
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LENGTH: 724 amino acids
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APPLICATION NUMBER:
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ADDRESSEE: SCIENCE & TECHNOLOGY LAW GROUP STREET: 268 Bush Street, Suite 3200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SOFTWARE: PatentIn Rel CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
les 62; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY:
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                                                                  244
288 ERVES 292
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                                                                                                                                                                                                                                                                                                                   156 KDYVIYANLTHLPRSEYVIGVGLGIAKCPYDPLDNSTAIYVENG------NPGGL
                                                                                                     299 NLLAHNWATYLKARLNCSISGEFP----FYFNEIQSVYQLPSDKSRFFATFTTSTNGLIG
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                                                                                                                                                                                                                                                                                                                                                    94104
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                                                                                                                                        --ILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSV-----TENHHLIYG
                                                                    SA----YVGENPDAFISKCPNOALRGYRFGVW-----
                                                                                                                                                                         SKWLDK-PNFVGSFDIGEYVYFFFRETAVEYINCGKA-----VYSRIARVCKKDVGGK
                                  SAVCSFHINEIQAAFNGKFKEQSSSN----SAWLPVLNSRVPEPRPGTCVNDTSNLPDTVL
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Bentley, David R.
O'Connor, Timothy
O'ENTION: The Semaphorin Gene Family
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                                                                                                                                                                                                                                                                                                                                                                                                     2.4;
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US-09-060-692-62
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US-09-060-692-62
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
LENGTH: 724 amino acid
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Osman, Richard A.
REGISTRATION NUMBER: 36,627
REFERENCE/DOCKET NUMBER: B9
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)343-4341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
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ATTORNEY/AGENT INFORMATION:
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APPLICANT: Kolodkin, Alex L.
APPLICANT: Matthes, David
APPLICANT: Bentley, David R.
APPLICANT: O'Connor, Timothy
TITLE OF INVENTION: The Semaphorin Gene Family
NUMBER OF SEQUENCES: 100
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APPLICATION NUMBER: US/0.
FILING DATE: 13-SEP-1993
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                                                                 299 NILAHNWATYLKARINCSISGEFP----FYFNEIQSVYQLPSDKSRFFATFTTSTNGLIG
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SAVCSFHINEIQAAFNGKFKEQSSSN---SAWLPVLNSRVPEPRPGTCVNDTSNLPDTVL
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Pred. No. 2.4;
40; Mismatches
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                                 KKGRCL-DYTELTDTVI 287
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RESULT 30
US-08-833-391-62
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APPLICANT: Goodma
                                                                                                                                                                                                                                                                                                                                                                                INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 724 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Re-lease #1.0,
CURRENT APPLICATION DATA:
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MEDIUM TYPE: Floppy
COMPUTER: IBM PC com
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: B9
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415)343-4341
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APPLICATION NUMBER: US 0:
FILING DATE: 13-SEP-1993
ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                       Match 3.2%;
Local Similarity 20.3%;
                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Osman, Richard
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
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299 NLLAHNWATYLKARLNĆŚISĆĖFP----FYFNEIQSVYQLPSDKSRFFATFTTSTNGLIG
                            200 --ILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSV-----TENHHLIYG
                                                                                           148 MELLEKNSNIKASTDLGRCAEFAFKTVAMDKNN--KATKYRYPFVYDSKKRLCH-----
                                                                                                                           205 PGLYSGTNAEFTKADTVIFRTDLYNTSAKRLEYK------FKRTLKYD
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268 Bush Street, Suite 3200
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Pred. No. 2.
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                                                                                                                                                                                                                                                                                       DB 3;
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                                                                                                                                                                                                                                                                                       Length 724;
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US-09-060-610-62
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SEQUENCE CHARACTERISTICS:
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tent No. 6344544
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APPLICANT:
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PC-DOS/MS-DOS
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/060 THE PILING DATE:
CLASSTON
                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (415)343-4341
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APPLICATION NUMBER: . 08/835,268
FILING DATE:
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                                                                                                                                                                                                                                                                Local
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REGISTRATION NUMBER: 36,627
REFERENCE/DOCKET NUMBER: B9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                                                                                                   ENGTH:
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                                                                       148
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                                                                                                                                                                                                                                              62;
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                                                                                                                                                                                                                                                                Similarity
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                                   SKWLDK-PNFVGSFDIGEYVYFFFRETAVEYINCGKA-----VYSRIARVCKKDVGGK 298
                                                                     MELLEKNSNIKASTDLGRCAEFAFKTVAMDKNN--KATKYRYPFVYDSKKRLCH----- 199
                                                                                                      PGLYSGTNAEFTKADTVIFRTDLYNTSAKRLEYK------FKRTLKYD 246
                                                                                                                                                                        KDYVIYANLTHLPRSEYVIGVGLGIAKCPYDPLDNSTAIYVENG------NPGGL
                                                                                                                                                                                                            KTFMERFNLTH-----
                                                                                                                                                                                                                                                                                                                                                                  amino acid
   --ILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSV-----TENHHLIYG 243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SAVCSFHINEIQAAFNGKFKEOSSSN---SAWLPVLNSRVPEPRPGTCVNDTSNLPDTVL
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Kolodkin, Alex L.
Matthes, David
Bentley, David R.
O'Connor, Timothy
                                                                                                                                                                                                                                                                                                                                                                                   724 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O'Connor, Timotny
NVENTION: The Semaphorin Gene Family
SEQUENCES: 100
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        (415) 343-4342
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IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                  protein
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                                                                                                                                                                                                                                              40; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B94-002-1
                                                                                                                                                                                                                                                              Score 94.5; DB 4;
Pred. No. 2.4;
                                                                                                                                                                                                            -----HHQSGIYVDLGQDKEVDGTLYREPAGL 88
                                                                                                                                                                                                                                              96;
                                                                                                                                                                                                                                                                            Length 724;
                                                                                                                                                                                                                                            Indels 107;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: FP TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: Osman, Richard A.
REGISTRATION NUMBER: 36,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CURRENT APPLICATION DATA:
APPLICATION NUMBER: PC
FILING DATE: 13-SEP-19
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 94111-4187
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: The Regents of the University of California TITLE OF INVENTION: The Semaphorin Gene Family NUMBER OF SEQUENCES: 66
                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: PatentIn Release #1.0,
                                                                                                                                                                                                                                                                                                                                                Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (415) 781-191
TELEFAX: (415) 398-3249
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY:
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                   244
                                                  299 NLLAHNWATYLKARLNCSISGEFP----FYFNBIQSVYQLPSDKSRFFATFTTSTNGLIG 354
                                                                                                                                                                                        205 PGLYSGTNAEFTKADTVIFRTDLYNTSAKRLEYK---
                                                                                                                                                                                                                                                            156 KDYVIYANLTHLPRSEYVIGVGLGIAKCPYDPLDNSTAIYVENG------NPGGL 204
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                                                                                                                                                                                                                          89 CPIW-GKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRISPFP 147
                                                                                                                                                                                                                                                                                              51 KTFMERFNLTH-----
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$A----YVGENPDAFISKCPNQALRGYRFGVW-------KKGRCL-DYTELTDTVI 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                     amino acid
                                                                                                                      SKWLDK-PNFVGSFDIGEYVYFFFRETAVEYINCGKA-----VYSRIARVCKKDVGGK 298
                                                                                                                                                      MELLEKNSNIKASTDLGRCAEFAFKTVAMDKNN--KATKYRYPFVYDSKKRLCH----- 199
                                                                                  --ILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSV--
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SEQ ID NO: 62:
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Pred. No. 2.
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                                                                                    TENHHLIYG 243
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RESULT 33
US-09-107-532A-5645
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Patent No. 6583275
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/051571
FILING DATE: July 2, 1997
ATTORNEY/AGENT INFORMATION:
NAME: Ariniello, Pamela Deneke
REGISTRATION NUMBER: 40,489
REFERENCE/DOCKET NUMBER: GTC-012
TELECOMMUNICATION INFORMATION:
TELEPHONE: (781)893-5007
                                                                                                                                                                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (B) LOCATION 1...702
SEQUENCE DESCRIPTION: SEQ ID NO: 5645:
                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: protein HYPOTHETICAL: YES ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                      FEATURE:
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                                                                                                               144 SPFPMELLEKNSNIKASTDLGRCAEFAFKTV----
                                                                                                                                                                                           107 RNNFL--EDVP-----TEKEYKQSGNPLPGGF----
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                                                                                                                                                                                                                                                    Similarity
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                                   YR-----YPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTEN 237
                                                                           GEINLVLEGVTTNTKVNIDYGKIGTYNGKKVNIKLVLSNIHLYSDTLPWNLLDNNYTKTH 174
                                                                                                                                                     KNNFIIPKDVPNAKTNITVNGASKVYKYHVDANKGGFTDDYVGLVEGNKNIRYPSFQKEY 114
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: US/09/107,532A FILING DATE: 30-Jun-1998
FRDDGYKNTNGAMSKSKKRT--VLWISDNLFSGIVY--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/085,598 FILING DATE: 14 May 1998
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MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (781)893-8277
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                                                                                                                                                                                                                                                    21.6%;
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                                                                                                                                                                                                                               Score 94; DB 4
Pred. No. 2.5;
33; Mismatches
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AND AMINO ACID SEQUENCES RELATING
FAECIUM FOR DIAGNOSTICS AND THERAN
                                                                                                                                                                                                                                                                  DB 4;
                                                                                                                                                                                                                                 117;
                                                                                                                                                                                                                                                                  Length 702,
                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                             ----NLNFVTPSGQR-I 143
                                                                                                               ----AMDKNNKATK 184
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 --HSTOMN 214
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GENERAL INFORMATION:
APPLICANT: Morimoto, Chikao
APPLICANT: Schlossman, Stuart F.
                                                                                                                     Matches
                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                      TELEX: 200154
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PS/2 Model 50Z or 55SX
OPERATING SYSTEM: IBM P.C. DOS (Version SOFTWARE: WordPerfect (Version 5.0)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US93/07923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" Diskette.
                                                                                                                                                                                                                                                                                                                                                                    NAME: Fraser, Janis K.
REGISTRATION NUMBER: 34,819
REFERENCE/DOCKET NUMBER: 00
TELECOMMUNICATION INFORMATION:
TELEPHONE: (617) 542-5070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Schlossman, Stuart F.
APPLICANT: Tanaka, Toshiaki
TITLE OF INVENTION: HUMAN CD26 AND METHODS
                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (017) 542-8906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 21-AUG-1992
APPLICATION NUMBER: 07/8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                     STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                   FOPOLOGY:
                                                                                                                                                                                                                                                                          LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             395
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        346 YYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNP-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                286 VIERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGVGRNYGF 345
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          238 HHLIYGSAYVGENP-----DAFIS-KCPNQA-----LRGYRFGVWKKGRCLDYTELTDT
 59 LTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNN--FLEDVPT 116
                                                                                                                   99;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OF SEQUENCES:
                                                                           1 MGLVGVQVLL-VLVADCTIFASGLSSSTR-SRESQTLSASTSGNPFQANVEMKTFMERFN
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                                                                                                                                                                                                                                                    amino acid
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                                       LGLLGAAALVTIITVPVVLLNKGTDDATADSRKTYTLT-----DYLKNTYRLKLYSLRWI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             --SVTPPTPE 402
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                                                                                                                   Conservative
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                                                                                                                                       20:8%;
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                                                                                                                                       Score 93.5;
Pred. No. 2.
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                                                                                                                     Mismatches
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                                                                                                                                                         DB 5;
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                                                                                                                     Indels 161;
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INFORMATION

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185 115

175

Matches Query Match

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Gaps

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63

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Local

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; LENGTH: 650
; TYPE: PRT
; ORGANISM: human
US-09-310-463-2
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US-09-310-463-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQ ID NOS: 39
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: Anderson, Dirk M.
APPLICANT: Borges, Luis
TITLE OF INVENTION: Family of Immunoregulators Designated Leukocyte Immunoglobulin-
TITLE OF INVENTION: Like Receptors (LIR)
FILE REFERENCE: 2624-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Cosman, David J.
                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
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                                                                                                                                                                                 405 LQCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVG
                                                                                                                                                                                                                          378 ----YQAEFPMGPVTSAHAGTYRCYGSQSSKPYLLTHPSDPLELVVSGPSGGPSSPTTG
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                              523 AEENI 527
                                                                                                      465 GVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSD--LMQEAEPSFWDE 522
                                                                                                                                                                                                                                                                                                                                        293 KAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  117
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DKNNKATKYRYPF-----VYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPR 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAM 176
                                                                   VILLLLLLLLELILRHRROGKHWTSTORKADFOHPAGAVGPEPTDRGLOWRSSPAA-DA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A---PASMLIGDHYLCDVTWATQERISLQWLRRIQNYSVMDICDYDESSGRWNCLVA 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADKFPDSF-----GACDVQACKRQKTSCVG-GQIQSTSVDCTADEQNECGSNTALIA 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETALQCT 408
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDW-WPLHQSDQPHSGGVGRNYGFYYV 348
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ----VGHKL----AYVWNN-DIYVKIEPN--LPSYRI-TWTGKEDIIYNGITDWVYEEEV
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                                                                                                                                                                                                                                                                                                                                                                               3.2%; Score 93.5; DB 4; Length 650; 20.8%; Pred. No. 2.5; tive 34; Mismatches 91; Indels 6
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RESULT 37
US-08-985-950-22
; Sequence 22, Application
; Patent No. 6140076
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COMPUTER: IBM/PC Compatible
OPERATING SYSTEM: Microsoft Word 7.0
SOFTWARE: PatentIn Release #1.0, Version #1
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/842,248A
FILING DATE: April 24, 1997
CLASSIFICATION: 536
ATTORNEY/AGENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 2, Application US/08842248A Patent No. 6448035
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: US
ZIP: 98101
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy d
COMPUTER: IBM/PC Comp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS:
LENGTH: 650 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Henry, Janis C.
REGISTRATION NUMBER: 34,347
REFERENCE/DOCKET NUMBER: 2624
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206) 587-0430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORRESPONDENCE ADDRESS:
ADDRESSEE: Janis C. Henry, Immunex Corporation
STREET: 51 University Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE OF INVENTION:
TITLE OF INVENTION:
NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEPHONE: (206) 233-0644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local
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                                                                                                                                                                                                                                                                                                                    LQCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVG 464
                                                                                                                                                                                                                                                                                                                                                            ----YQAEFPMGPVTSAHAGTYRCYGSQSSKPYLLTHPSDPLELVVSGPSGGPSSPTTG
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VENTION: Family of Immunoregulators Designated

VENTION: Leckocyte Immunoglobulin-Like Recepto
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20.8%; Pred. No. 2.5;
tive 34; Mismatches
                            US/08985950
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                                                                                                                                                                                                                                                                                 ---PTSTSGPEDQPLT-PTGSDPQSGLGRHLGVVIGILVA
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US-09-546-049-22
; Sequence 22, Application US/09546049
; Patent No. 6479638
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                                                        RESULT 38
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Best Local Similarity
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PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 60/041,279
FILING DATE: 21-MARCH-1997
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 60/033,181
FILING DATE: 16-DEC-1996
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US 60/032,252
FILING DATE: 06-DEC-1996
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 651 amino acids
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APPLICATION NUMBER: US/08/985,95;
FILING DATE: 05-DEC-1997
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MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERATING SYSTEM: PC-DOS/MS-DOS
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MOLECULE TYPE:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: (650)852-9196
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CORRESPONDENCE ADDRESS:
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Pred. No. 2.5;
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MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ ID
US-09-546-049-22
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Matches 51; Conserv
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APPLICANT: Adema,
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APPLICATION NUMBER: US/09/546,049 FILING DATE: 10-Apr-2000
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REFERENCE/DOCKET NUMBER:
TELECOMMUNICATION INFORMATION:
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MEDIUM TYPE: Floppy disk
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TITLE OF INVENTION: Isolated Mammalian Monocyte Cell Genes;
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CITY: Palo Alto
                                         VILLLLLLLLLTLILRHRRQGKHWTSTQRKADFQHPAGAVGPEPTDRRLQWRSSPAA-DA
                                                                          GVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSD--LMQEAEPSFWDE 522
                                                                                                                                                                                     ----YQAEFPMGPVTSAHAGTYRCYGSQSSKPYLLTHPSDPLELVVSGPSGGPSSPTTG
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STREET: 901 California Avenue
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llarity 20.8%;
Conservative 34
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Gorman, Daniel M.
Gorlanahan, Terrill K.
Zurawski, Sandra M.
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Lanier, Lewis L.
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US-08-230-491A-3
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INFORMATION FOR SEQ ID NO:
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MEDIUM TYPE: DISKETTE 3.5 inch 1.2
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ADDRESSEE: FELFE & LYNCH
STREET: 805 THIRD AVENUE
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APPLICANT: Garin-Chesa,
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REFERENCE/DOCKET NUMBER: LUI
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FILING DATE: 20-APRIL-1994
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                                                                                                                                            118 --YNYVKOWRHSYTASYDIYDLNKR-----OLITEERI-----PNNTOWVTWSP-
                                290 VESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDW-WPLHQSDQPHSGGVGRNYGFYYV 348
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99; Conservative
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amino acid
OGY: linear
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Zimmer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 08/230,491
FILING DATE: 20-APRIL-1994
ATTORNEY/AGENT INFORMATION:
NAME: Hanson, No. 5767242man D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SOFTWARE: Wordperfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/
FILING DATE: 18-MARCH-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM: MEDIUM TYPE: Diskett
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Zimmermann, Rainer; Park, John E.;
APPLICANT: Rettig, Wolfgang; Old, Lloyd J.
TITLE OF INVENTION: ISOLATED DIMERIC FIBROBLAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JUMBER OF SEQUENCES:
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OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 30 REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CITY: New York City
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                                                                        177 DKNNKATKYRYPF-----VYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPR 231
                                                                                                                                                   117 EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAM 176
                                                                                                                                                                                        64 SDHEY-----
                                                                                                                                                                                                                           59 LTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNN--FLEDVPT 116
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                                     --YNYVKQWRHSYTASYDIYDLNKR-----QLITEERI-----PNNTQWVTWSP- 159
                                                                                                               FDEFGHSINDYS-----ISPDGQFI-----LLE---
                                                                                                                                                                                                                                                                 LGLLGAAALVTIITVPVVLLNKGTDDATADSRKTYTLT-----DYLKNTYRLKLYSLRWI 63
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Pred. No. 3
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Sear Job	B	Ś	ğ	\$	8	8	용
Search completed: Job time : 35 secs	289	409	244	349	208	290	160
Search completed: October 2, 2003, 15:53:02 Job time : 35 Becs	289 APASMLIGDHYLCDVTWATQERISLQWLRRIQNYSVMDICDYDESSGRWNCLVA 342	409 ADKFPDSFGACDVQACKRQKTSCVG-GQIQSTSVDCTADEQNECGSNTALIA 459	244 BSLOYPKTVRVPYPKAGAVN-PTVKFFVVNTDSLSSVTNATSIQIT 288	349 DTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETALQCT 408	208 FSAYSALWWSPNGTFLAYAQFNDTEVPLIBYSPYSD 243	290 VESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDW-WPLHQSDQPHSGGVGRNYGFYYV 348	160VGHKLAYVWNN-DIYVKIEPNLPSYRI-TWTGKEDIIYNGITDWVYEEEV 207

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Result
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DB seq length: 2000000000
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re greater than or equal to the score of the result being printed,
is derived by analysis of the total score distribution.

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1: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1980.DAT:*

2: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1981.DAT:*

3: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1982.DAT:*

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4: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1983.DAT:*

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9: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT:*

10: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1999.DAT:*

11: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1991.DAT:*

13: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993.DAT:*

14: /SIDS1/gcgdata/geneseq/geneseqp-emb1/AA1993.DAT:*

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Gapop 10.0 , Gapext 0.5
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AAP91632
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(without alignments)
1034.591 Million cell updates/sec
                                                                          Toxoplasma gondii Rhoptry membrane a Plasmodium knowles Plasmodium falcipa Plasmodium falcipa Synthetic P. falci
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AAE26366	AAE26349	AAB60167	AAE12130	AAY92620	AAU98923	AAG75613	AAB53307	AAR39568	AAU77114	AAM51143	AAE20479	AAE24067	AAG88267	AAB85458	AAY84780	AAB21198	AAW92406	AAW01111	ABP25604	AAB21208	ABB97742	AAR94957	AAM78788	AAU74355	AAM41108	AAM79773 ·	AAM79772	88	N	ABG16636	AAB24128	93	69	8569	AAP91588
. Human Her2 antigen	2 pro		tyrosine	heregulin 2	breast	colon	colon car	nce of c-er	Her-2/neu	Her-2/neu	Her-2/neu p	n Her-2 prote	neu am	HER-2	acid seque	HER-	Human HER-2/neu on	HER-2/neu protein.	Streptococcus poly	Human HER-2/neu pr	Human procathepsin		_		Human polypeptide		n protei		n polype		yoelii	vivax	prote	בנים	Rhoptry membrane a

## ALIGNMENTS

RESULT 1 ABP56991

ABP56991 standard; Peptide;

86 Å

10-APR-2003 (first entry)

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WPI; 2003-201556/19.
                                                                                                                                                             Eimeria maxima; 250 kDa antigen; sporozoite; merozoite; infection; vaccine; antiparasitic; gene therapy.
                    Witcombe D, Smith NC,
                                                                     06-JUL-2001; 2001US-303670P.
                                                                                      03-JUL-2002; 2002WO-US21237.
                                                                                                       16-JAN-2003.
                                                                                                                      WO2003004684'-A2
                                                                                                                                              Toxoplasma gondii.
                                     (WITC/) WITCOMBE D. (SMIT/) SMITH N C. (WALL/) WALLACH M.
                                                                                                                                                                                        Toxoplasma gondii AMA1 amino acid sequence fragment
                     Wallach M;
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RESULT 2
AAP91632
ID AAP91632
YX AAP91632
YX AAP96
YX PAC AAP9
YX 25-M
DT 26-M
DT 26-M
DT 27-M
DT 27-M
DT 28-M
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CC from present sequence represents an amino acid sequence used in an example
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 5; Fig 33; 198pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                             10-FEB-1989;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO8907645-A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Malaria; rhoptry membrane antigen-1; antibodies
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25-JAN-1990
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                                             N-PSDB; AAN90703
                                                                                      WPI; 1989-263714/36
                                                                                                                                                                         Peterson MG,
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                                                                                                                                                                                                                                                               (SARA-)
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                                                                                                                                                                         PE,
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                                                                                                                                                                             Marshall VM,
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                                                                                         25-MAR-2003
17-DEC-2001
15-APR-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RMA-1 can generate an immune response to malaria, and antibodies which can inhibit growth of the parasite. RMA-1 initially has mol. wt. 80 kD. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rhoptry membrane antigen of Plasmodium falciparum - used for producing antibodies and in immunisation, diagnostic and treatment methods for malaria.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
           Plasmodium
                                                                                                                                                   AAR10551;
                                                                                                                                                                            AAR10551 standard; Protein; 563
                                     Plasmodium merozoite antigens; malaria vaccine
                                                                  Plasmodium
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MIKSAFLPTGAFKADRYKSHGKGYNWGNYNTETQ---KCEIFNVKPTCLINNSSYIATTA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fig 3;
                                                                                                                                                                                                                                                                                                                                                                                       QCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTA-----DEQNECGSN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                AGSLSEETPNFIIPSN----------
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                                                                                                                                                                                                                                                                                                       KMKIIIASSAAVAVLATILM----VYLYKR----KGNAEKYDKMDEPOHYGKSNSR-NDEM
                                                                                                                                                                                                                                                                                                                                --TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM 512
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                                                                                                                                                                                                                                                                          QEAEPSFWDEAEENIEQDGETHYMVEGDY
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                                                                  knowlesi 66kD merozoite antigen protein
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(updated)
(first entry)
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; Pred. No. 3.8e-31;
86; Mismatches 212;
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Best Local Similarity
Matches 148; Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Note: Revised entry submitted to correct the patent number format of US Government-owned NTIS applications to prevent clashes with ongoing US granted patent numbers. For further information please visit the Derwent web site at www.derwent.com/dwpi/updates/ntis us.html.)
(Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This protein is encoded by a recombinant DNA molecule comprising the complete p.knowlesi merozoite antigen gene and e.g. a pUC19 or vaccinia virus vector sequence and regulatory elements. This allows efficient expression of the antigen on transformation of host cells. It is useful in an anti-majarial vaccine for con-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           See also AAQ10869.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ferring immunity against the merozoite form of the parasite preventing infection of uninfected red blood cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; fig 1; 31pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Waters AP, McCutchan TF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22-FEB-1990;
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IEREIKKQSRNMNLYSVDKERIVLPRIFISTDKESIKCPCEPEHISNSTCNFYVC-----
                                                          KSKGRGYNWANFDSV-NNKCYIFNTKPTCLINDKNFFATTALSHPQEVDNEFPCSIYKDE
                                                                                        -GVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAG---SLSEETPNFIIPSN
                                                                                                                       SLRECNRIVFE--ASASDQPRQYEEELTDYEKIQEGFRQNNRDMIKSAFLPVGAFNSDNF
                                                                                                                                                    A--QCWVKTFENDGVASDQPHTY--PLTSQASWNDWWPLHQSDQPHSG---
                                                                                                                                                                                 -EKFDNLVYLSKNVSND---WENKCPRKNLGNAKFGLWVDGNCEEI-----PYVNEVEAR
                                                                                                                                                                                                                VTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIERVESK
                                                                                                                                                                                                                                             VIAEDQN---TSYRHPAVYDEKNKTCYMLYLSAQENMGPRYCSPDSQNKD-AMFCFKPDKN
                                                                                                                                                                                                                                                                                                            QRLKEGGFAFPN----ADDHISPITIANLKERYKENADLMKLNDIALCKTHAASF
                                                                                                                                                                                                                                                                                                                                        KEYKQSGNPLPGGFNLNFVTPSGQRISPFPM----ELLEKNSNIKASTDLGRCAEFAFKT
                                                                                                                                                                                                                                                                                                                                                                       LERAHNSGIRIDLGEDAEVGNSKYRIPAGKCPVFGKGIVIENSN-----VSFLTPVATGA 118
                                                                                                                                                                                                                                                                                                                                                                                                    LTHHHOSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPT-E
                                                                                                                                                                                                                                                                                                                                                                                                                                    IYYILFLSAQCLVHMGKCERNQKTTRLTRSANNASLEKGPIIERSIRMSNPWKAFMEKYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                VQVLLVLVADCTIFASGL----SSSTRSRESQTLSASTSGNPFQANVEM-----KTFMERFN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               563 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             merozoite antigen proteins and DNA sequences - useful prodn., anti-malarial drug design, and in diagnostics
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                           ------PSVTPPTPETALQCTADKFPDSFGACDVQACKRQKT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 420.5; |
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                                                                                                                                                                                                Best Loc
Matches
                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                      This sequence is the plasmodium falciparum AMA1 antigen. CDNA encoding it was cloned into vaccinia donor plasmids before being inserted into the vaccinia virus to be used in a vaccine to stimulate an antimalarial immunological response, or for in vitro proding of gene prods. For use as immunogens. As plasmodium genes are conserved among P. falciparum strains, they are widely effective in a vaccine.
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                                                                                                                                                                                                                                                                                                Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Recombinant pox:virus.-
antimalarial vaccine
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08-MAR-1993
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                                                                                                                          GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
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(first entry)
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                                                                                                                                                                                             Score 418; DB 13;
Pred. No. 6.3e-30;
8; Mismatches 207;
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-GGFAF---PPTEPLMSPMTLDEMRHFYKDNKY
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                                                                                                                                                                                                Indels 124;
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                                                                                             Recombinant poxvirus contg.
region - useful in vaccines
Plasmodium immunogens
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24-AUG-1995
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                                                Claim 3; Fig 5; 183pp; English.
                                                                                                                                                                                                                                                                                                                                                                    11-JUN-1993;
09-JUN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         malaria diagnosis.
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  AAQ80910 encodes AAR68840 the P. falciparum AMA-1 gene product.
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94US-0257073
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                                                                                                                                                Plasmodium DNA in non-essential
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             107 GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       41 GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
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                                                                    IASSARVAVLAT--ILMV---
                                                                                                                                            KRPCDPEMVSNSTCRFFVCKCVERRAEVTSNNEVVVKEEYKDEYADIPEHKPTYDKMKII
                                                                                                                                                                                                                                                                                  MIKSAFLPTGAFKADRYKSHGKGYNWGNYNTETQ---KCEIFNVKPTCLINNSSYIATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SN-----TTFLTPVATGNQYLKD-----GGFAF---PPTEPLMSPMTLDEMRHFYKDNKY
MLDPEASFWGEEK---RASHTTPVLMEKPY
                                   MQEAEPSFWDEAEENIEQDGETHVMVEGDY 541
                                                                                                         GSNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDL
                                                                                                                                                                                                               LSHPIEVENNFPCSLYKDEIMKEIERESKRIKLNDNDDEGNKKIMLQEFLISDDK--DSL
                                                                                                                                                                                                                                               AGSLSEETPNF----CTADKFPDSF 416
                                                                                                                                                                                                                                                                                                                       -----LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTA
                                                                                                                                                                                                                                                                                                                                                          CEDIPHVNEFPAIDLFE----CNKLVFELS--ASDQPKQYEQHLTDYEKIKEGFKNKNAS
                                                                                                                                                                                                                                                                                                                                                                                          CLDYTELTD-TVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VKNLDELTLCSRHAGNMI--PDNDKNSNYKYPAVYDDKDKKCHILYIAAQENNGPRYCN-
                                                                                                                                                                          -GACDVQ----ACKROKTSCVGGQIQSTSVD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                KGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        622 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 418; DB 16;
Pred. No. 6.3e-30;
                                                                      ----YLYKR----KGNAEKYDKMDEPODYGKSNSR-NDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches 207;
   621
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RESULT 6
AAU99359
ID AAU9
SXEXEXEXEX
                               Synthetic P.
                                          26-SEP-2002
                                                     AAU99359;
                                                               AAU99359 standard;
                               falciparum
                                          (first entry)
                                                                Protein;
                                                                622
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Apical membrane antigen-1; AMA-1; protozoacide; Plasmodium; ectodomain; malaria; parasite; vaccine; epitope; FVO Pf83syn; mutant; mutein. AMA-1 ectodomain (FVO Pf83syn) immune protein

Plasmodium falciparum

Synthetic

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                                                                                                                                      Matches
                                                                                                    Query Match
                                                                                                                                                              or medicaments for preventing malaria caused by Plasmodium falciparum. FAMA-1 has an unusually high A+T content and N-glycosylation sites which make expression and deglycosylation in Yeast difficult. The method provides an efficient production of Plasmodium falciparum, strain FVO, AWA-1 ectodomain in high amounts due to its effective expression in the yeast plachia pastoris. This is achieved by mutating the gene sequence (FVO Pf83syn) to utilise the yeast's codon usage and remove the N-glycosylation sites, which are not conserved in Plasmodium. The FVO Pf83syn can be used to create vaccines against Plasmodium induced malaria. The sequence presented is the synthetic P. falciparum AWA-1 ectodomain (FVO Pf83syn) protein.
                                                                                                                                                                                                                                                                                                                                                  The invention discloses the production of mRNA encoding Plasmodium apical membrane antigen-1 (AMA-1) ectodomain, its functional part, derivative and/or analogue in a yeast cell, which has been modified to use the yeast's codon usage. Plasmodium falciparum (Pf) is the most important human malaria parasite. At present there is no effective vaccine against human malaria, but studies have indicated that the AMA-1 family of molecules are a target for protective immune responses. The proteins have a predicted ectodomain and cytoplasmic domain and evidence has identified that protection invoked by AMA-1 is directed at conformational epitopes located in the ectodomain. The plasmodium AMA-1 ectodomain, its functional part, derivative and/or analogue and the proteinaceous molecule are useful for disgnosing and preparing vaccines are responses to the proteinaceous molecule are useful for disgnosing and preparing vaccines are responses.
                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 1; Fig 1; 42pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ectodomain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Producing mRNA encoding Plasmodium AMA-1 ectodomain in yeast cell, useful for preparing vaccines for treating or preventing malaria, comprises providing the yeast cell with a nucleic acid encoding the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Kocken CHM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22-DEC-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (BIOM-)
   107
                                                                   149;
               41 GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STICHTING BIOMEDICAL PRIMATE RES CENT
                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABK89028
GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                                      622 AA;
                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2000EP-0204697.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /label= Signal_peptide
25..622
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              note=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'note= "Wild-type Asn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             note= "Wild-type"
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                                                        14.1%; pred
26.0%; Pred
79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Wild-type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Blackman MJ,
                                                               Score 412; DB 23;
Pred. No. 2.3e-29;
79; Mismatches 215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ser
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                                                                   215;
                                                                                               Length 622
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                                                                 Indels 130;
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                                                               Gaps
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RESULT 7
AAU9930
ID AAU99
XX AAU9
XX AAU9
XX AAU9
XX P. 6
XX Apic
XX Apic
XX Plas
XX Plas
XX Papic
XX Plas
XX Papic
XX P
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                                WPI; 2002-575381/61
                                                                              Kocken CHM,
                                                                                                                                                                                             22-DEC-2000; 2000EP-0204697.
                                                                                                                                                                                                                                                     21-DEC-2001; 2001WO-NL00934.
                                                                                                                                                                                                                                                                                                            04-JUL-2002.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   Protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plasmodium
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Apical membrane antigen-1; AMA-1; protozoacide; Plasmodium; ectodomain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26-SEP-2002
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                                                                                                                                         STICHTING BIOMEDICAL PRIMATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GNCEDI PHVNEF---SANDL FECNKL V FELS--ASDQ PKQYEQHLTDY EKI KEGFKNKNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NDEMLDPEASFWGEEK---RASHTTPVLMEKPY 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNMKIIIASSAAVAVLATILMV-----YLYKR----KG-NAEKYDKMDQPQHYGKSTSR 591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SNTALI ----AGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DMIKSAFLPTGAFKADRYKSHGKGYNWGNYNRETQ---KCEIFNVKPTCLINDKSYIATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SDLMQEAEPSFWDEAEENIEQDGETHVMVEGDY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -KDOSKRNSMFCFRPAKDKLFENY-----VYLSKNVVDNWEEVCPRKNLENAKFGLWVD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LKCPCDPEMVSQSTCRFFVCK-----CVERRAEVTSNNEVVVKEEYKDEYADIPEHKPTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LQCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTS-----
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                                                                                 Thomas AW,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                      /label= Mature_AMA-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= Signal_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --- LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYT
                                                                                    Blackman MJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ጅ
                                                                                                                                         RES CENT.
                                                                                    Withers-Martinez
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----PTNPLISPMTLNGMRDFYKNNE
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                                                                                    Holder AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CC vaccine against human malaria, but studies have indicated that the AMA-1 can protective are apreciated ectodomain and cytoplasmic domain and evidence thas identified that protection invoked by AMA-1 is directed at conformational epitopes located in the ectodomain. The Plasmodium AMA-1 cectodomain, its functional part, derivative and/or analogue and the protection invoked by AMA-1 is directed at conformational epitopes located in the ectodomain. The Plasmodium AMA-1 cectodomain, its functional part, derivative and/or analogue and the protectional part, derivative and/or analogue and the protections molecule are useful for diagnosing and preparing vaccines comedicaments for preventing malaria caused by Plasmodium falciparum. Pf comake expression and deglycosylation in Yeast difficult. The method composited and recodomain in high amounts due to its effective expression in the great yeast plachia pastoris. This is achieved by mutating the gene sequence confered by plasmodium. The FVO Pf83syn) to utilise the yeast's codon usage and remove the confered protective expression in the plasmodium induced malaria. The sequence presented is the p. falciparum AMA-1 ectodomain confered the synthetic p. falciparum AMA-1 ectodomain confered the synthetic p. falciparum AMA-1 ectodomain confered in plasmodium induced confered in confered in confered in confered in the specification, but was created to the indexer from information given in example 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               apical membrane antigen-1 (AMA-1) ectodomain, its functional part, derivative and/or analogue in a yeast cell, which has been modified to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Producing mRNA encoding Plasmodium AMA-1 ectodomain in yeast cell, useful for preparing vaccines for treating or preventing malaria, comprises providing the yeast cell with a nucleic acid encoding the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              use the yeast's codon usage. Plasmodium falciparum (Pf) is the most
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      important human malaria parasite. At present
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          invention discloses the production of mRNA encoding Plasmodium cal membrane antigen-1 (AMA-1) ectodomain, its functional part,
                                              488
                                                                                          405
                                                                                                                                          430
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  SNTALI ----AGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRP
                                                                                                                                                                                                                                    SMIKSAFLPTGAFKADRYKSHGKGYNWGNYNRETQ---KCEIFNVKPTCLINNSSYIATT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PDRLPYRNNFLEDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPM----ELLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN 160
                                                                                                                                                                                                                                                                                                                            GNCEDIPHVNEF---SANDLFECNKLVFELS--ASDOPKOYEOHLTDYEKIKEGFKNKNA 372
                                                                                                                                                                                                                                                                                                                                                                             GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YVKNLDELTLCSRHAGN--MNPDNDKNSNYKYPAVYDYNDKKCHILYIAAQENNGPRYCN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SN-----PTNPLISPMTLNGMRDFYKNNE
                                              LKCPCDPEMVSQSTCRFFVCK-----CVERRAEVTSNNEVVVKEEYKDEYADIPEHKPTY
                                                                                                                                        ALSHPIEVEHNF--PCSLYKDEIKKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDS
                                                                                                                                                                                        AAGSLSEETPNFIIPSN-----
                                                                                                                                                                                                                                                                                                                                                                                                                           -KDQSKRNSMFCFRPAKDKLFENY-----TYLSKNVVDNWEEVCPRKNLENAKFGLWVD
                                                                                          LOCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTS--
                                                                                                                                                                                                                                                                                -----LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYT 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  622 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
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Pred. No. 3.6e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches 214;
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                                                                                                                                                                                    Length 622;
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                                                                                            -VDCTAD -- EQNECG
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41 43

Conservative

71;

Gaps

GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100

GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN

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RESULT 8
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Query Match
Best Local Similarity
Matches 123; Conserv
                                                                         of AWA-1, and designated AWA1/E. AWA-1 is an integral membrane localised in the apical rhoptries of the merozoites present within the late stage schizont. The AWA1/E polynucleotide comprises an Escherichia coli codon bias. The AWA1/E polynucleotide comprises an Escherichia reagent, for producing antibodies, and as a vaccine. It is useful for diagnosing malaria antibodies, monitoring malaria infection or prognosin, the response to treatment of patients suffering from malaria infection, or for inducing a protective immune response to malaria infection,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Misc-difference
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABB99416 standard; Protein; 478
                                                           Sequence
                                                                                                                                                                                                                                                       Claim 10; Page 88; 88pp; English.
                                                                                                                                                                                                                                                                                                    New Plasmodium falciparum apical membrane antigen-1 (AMA-1) ectodomain protein, useful as a diagnostic reagent, for producing antibodies, as vaccine, or for inducing a protective immune response to malaria
                                                                                                                                                                                                                                                                                                                                                                  WPI; 2003-029928/02.
N-PSDB; ABV72528.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26-MAR-2001; 2001US-278616P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-MAR-2002; 2002WO-US09406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     03-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Peptide
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               membrane
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Apical membrane antigen-1; AMA-1; ectodomain protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Amino acid sequence of AMA-1 ectodomain protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          29-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABB99416;
                                                                                                                                                                                                                                                                                                                                                                                                              Lanar DE,
                                                                                                                                                                                                                                                                                                                                                                                                                                            (REED-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         543
                                                                                                                                                                                                                                                                                                                                                                                                                                             REED ARMY INST RES WALTER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NDEMLDPEASFWGEEK---RASHTTPVLMEKPY 621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SDLMQEAEPSFWDEAEENIEQDGETHVMVEGDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNMKIIIASSAAVAVLATILMV-----YLYKR----KG-NAEKYDKMDQPQHYGKSTSR 591
                                                                                                                                                                                                                                                                                                                                                                                                              Dutta S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 falciparum
                                                             478 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             apical rhoptry; merozoite; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                               Ware
              13.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "His tag"
                                                                                                                                                                                                                                                                                                                                                                                                              LA, Nair LPV
 Score 404; DB 24;
Pred. No. 8.7e-29;
'l; Mismatches 163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          by AGC"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541
                                                                                                       ia infection or prognosing from malaria infection,
                             Length
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AMA1/E;
malaria.
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    18
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ABG70931
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The invention relates to a fusion protein comprising the amino acid sequence of the Plasmodium spical membrane antigen 1 (AMA-1), that of the Plasmodium merozoite surface protein-1 (MSPI) and the connection peptide between these amino acid sequences. Also included are; (1) an isolated DNA molecule encoding the fusion protein; (2) a vector containing the DNA molecule; (3) a host cell containing the vector; (4) producing the fusion protein by culturing the host cells to express
                                                                                                                                                                                                                                                                                               Preparation of fusion protein from Plasmodium merozoite surface protein-1 and Plasmodium apical membrane antigen-1, for use in anti-malarial vaccines for treatment of malaria -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Plasmodium falciparum Synthetic.
                                                                                                                                                                                                                                       Claim 3; Page 29-31; 39pp; Chinese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-FEB-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-2002;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Malaria; merozoite surface protein-1; MSP-1; AMA-1; PfCP-1; apical membrane antigen-1; vaccine; antimalarial; protozoac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmodium
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25-JAN-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the protein before isolation; and (5) anti-malarial vaccines containing the fusion protein or its encoding DNA molecule. The fusion antigen is useful for anti-malarial vaccines for treatment of malaria. The fusion protein has superior immunogenicity and can cause an effective immune response against Plasmodium. The present sequence is the AMA-1/MSP-1
                                                                     12-FEB-1988;
               Peterson MG,
                                                                                               10-FEB-1989;
                                                                                                                            24-AUG-1989.
                                                                                                                                                      WO8907645-A.
                                                                                                                                                                                Plasmodium chabaudi adami
                                                                                                                                                                                                          Malaria; rhoptry membrane antigen-1;
                                                                                                                                                                                                                                      Rhoptry membrane antigen-1.
                                                                                                                                                                                                                                                                                                           AAP91588;
                                                                                                                                                                                                                                                                                                                                     AAP91588
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                                          (SARA-) SARAMANE PTY LTD.
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                                                                                                                                                                                                                                                                                                                                     standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MIKSAFLPTGAFKADRYKSHGKGYNWGNYNTETQ----KCEIFNVKPTCLIQQSSYIATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W--NDWWP--LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTA
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               Crewther PE,
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              Smythe JA,
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Pred. No. 1.8e-28;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Predicted mol. wt. is 63901 D. This shows great similarity to P. falciparum RMA-1 protein (sequence in specification-claimed). (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB;
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                                 Multivalent protein; immune response; Plasmodium vivax; parasite; protozoacide; vaccine; malaria: racombinant: vivo---
                                                                                                                                                         Recombinant protein ViVaclp.
                                                                                                                                                                                                                                                                                                                                                                                                  AAB85697 standard;
                                                                                                                                                                                                                                            29-OCT-2001
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                                                                                                                                                                                                                                                                                                                                                                                                      Protein; 1807
                                                                                                                                                                                                                                    entry)
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Pred. No. 7.8e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels 138;
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610

V---EAEDLRECNRIVF--GASASDOPTOY----EEEMTDYQKIQQGFRQNNREMIKSAF

660

609 284 554

330

TVIERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQ--------FCFKPDKNESFEN--LVYLSKNVRNDWD---KKCPRKNLGNAKFGLWVDGNCEBIPYVKE

YCFKPRKSVT-ENHHLIYGSAYVGENÞDÁFISKCÞNQALRGYRFGVWKKGRCLDYTELTD

र् 밁 Ś 밁 S 밁 Ś

167

AEFAFKTV-AMDKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTW

RTHAASFVWAGDQN---SSYRHPAVYDEKEKTCHMLYLSAQENMGPRYCSPDAQNRDAV-

448

393 AFMEKYDIERTHSSGVRVDLGEDAEVENAKYRIPAGRCPVFGKGIVIENSD-----VSFL

TEMERFNLTHHHOSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFL 111 GIYYIIFLSAQCLVHIGKCGRNQKPSRLTRSANNVLLEKGPTVERSTRMSNPW-----K 392

EDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKAST----DLGRC

166 447

498

---ANDHISPMTLANLKERYKONVETMKLNDIALC

Best Loc Matches

Local 132;

Similarity

Conservative

73;

Mismatches 182;

Indels 114;

Gaps

339

5 GVQVLLVLVADCTIFASGL-----SSSTRS-----RESQTLSAST-SGNPFQANVEMK 51

52

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499

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than one stage in a life cycle of a Plasmodium vivax parasite. (I) is useful as a vaccine for stimulating an immune response, specifically a cyclective immune response that confers increased resistance to infection by Plasmodium parasites, such as P. vivax. (I) is especially useful in the treatment, prevention and reduction of malarial infection, as cycles of the treatment, prevention and reduction of malarial infection, as cycles of the malarial parasite. The antibodies produced are useful for the detection of Plasmodium species in a biological sample, and for conferring immunity against multiple stages of the malarial parasite. The antibodies produced are useful for the detection or measurement of antigenic epitopes derived from one or more stages in a life cycle of a parasite, particularly P. vivax. The cycline comprising the recombinant proteins, is cost-effective, health-cycling intervention for controlling, preventing or treating the incidence of malaria. The present sequence represents the amino acid sequence of the recombinant protein vivaclp, a multivalent and
               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New recombinant multivalent protein comprising antigenic determinants derived from more than one stage in a life cycle of Plasmodium vivax, useful as a vaccine for treating, preventing and reducing malarial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31-JAN-2000; 2000US-0179213.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Plasmodium
                                                                                                                                                                                                                                                                                                                                                                            determinants, fragments or conservative substitutions, derived from
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 5; Page 39-45;
                                                      Sequence
                                                                                          multistage vaccine against P.
                                                                                                                                                                                                                                                                                                                                                                                                stimulate an
                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates
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                                                          1807 AA;
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13.4%;
                                                                                                                                                                                                                                                                                                                                                                                              response to Plasmodium vivax. (I) comprises antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                     59pp; English.
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   Score 391; DB 22;
Pred. No. 1.2e-26;
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                     Length 1807;
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more

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RESULT 12
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                                                                                                               useful as a vaccine for stimulating an immune response, specifically a protective immune response that confers increased resistance to infection by Plasmodium parasites, such as P. vivax. (I) is especially useful in the treatment, prevention and reduction of malarial infection, as research or diagnostic reagents for the detection of Plasmodium species in a biological sample, and for conferring immunity against multiple stages of the malarial parasite. The antibodies produced are useful for the detection or measurement of antigenic epitopes derived from one or more stages in a life cycle of a parasite, particularly P. vivax. The
                                                                                                                                                                                                                                                                                                                                                                                                                  New recombinant multivalent protein comprising antigenic determinants derived from more than one stage in a life cycle of Plasmodium vivax, useful as a vaccine for treating, preventing and reducing malarial
                               incidence of malaria. The present sequence resquence of the recombinant protein ViVac2p, multistage vaccine against P. vivax.
                                                                              vaccine comprising the recombinant proteins, is cost-effective, he promoting intervention for controlling, preventing or treating the
                                                                                                                                                                                                                                                              than one stage in a life cycle of a Plasmodium vivax parasite. (I) is useful as a vaccine for stimulating an immune response, specifically a
                                                                                                                                                                                                                                                                                           The invention relates to recombinant multivalent proteins (I) that stimulate an immune response to Plasmodium vivax. (I) comprises antigenic determinants, fragments or conservative substitutions, derived from more
                                                                                                                                                                                                                                                                                                                                                                     Claim 5; Page 48-55; 59pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Multivalent protein; immune response; Plasmodium vivax; parasite; protozoacide; vaccine; malaria; recombinant; ViVac2.
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RESULT 13
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                                                                                                                                                                                                                                                                                                                  25-MAR-2003
17-DEC-2001
           WPI; 1991-044381/06.
N-PSDB; AAQ10869.
                                                                                                                                            22-FEB-1990;
                                                                                                                                                                                                USN7483516-N
                                                                                                                                                                                                                          Plasmodium vivax.
                                                                                                                                                                                                                                                    Plasmodium
                                                                                                                                                                                                                                                                            Plasmodium vivax 66kD merozoite antigen protein partial sequence
                                                                                                                                                                                                                                                                                                                                                            AAR10935;
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                                                                                                                  22-FEB-1990;
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                                                 ΑP,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5 GVQVLLVLVADCTIFASGL-----SSSTRS-----RESQTLSAST-SGNPFQANVEMK 51
                                                                           NAT INST OF HEALTH US SEC OF COMMERCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GACDVQACKRQKTSCVGGQIQ 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               V---EAEDLRECNRIVF--GASASDQPTQY----EEEMTDYQKIQQGFRQNNREMIKSAF
                                                                                                                                                                                                                                                                                                                                                                                                                                                     STCNFYVC----NCVEKRVE 1014
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---ETPNFIIPSN--
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKAST----DLGRC
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                                                                                                                                                                                                                                                   merozoite
                                                 McCutchan
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(first entry)
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                                                                                                                                                                                                                                                                                                                                                                                    Protein; 489
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                                                                                                                                                                                                                                                  antigens;
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Pred. No. 1.4e-26;
                                                                                                                                                                                                                                                   malaria
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Plasm
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Best Local S
Matches 138
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(Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the complete P.vivax merozoite antigen gene and e.g. a pUC19 or vaccinia virus vector sequence and regulatory elements. This allows efficient expression of the antigen on transformation of host cells. It is useful in an anti-malarial vaccine for conferring immunity against the merozoite form of the parasite and preventing infection of uninfected red blood cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            See also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmodium merozoite antigen proteins and DNA sequences - useful in vaccine prodn., anti-malarial drug design, and in diagnostics
 Plasmodium;
                           Plasmodium yoelii YM
                                                                                 AAB24128
                                                      29-JAN-2001
                                                                                                            AAB24128
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138; Conserv
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                                                                                                            standard;
                                                                                                                                                                                                                                                                                                                                                                       RNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSE---ETPNFIIPSN----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SYRHPAVYDEKEKTCHMLYLSAQENMGPRYCSPDAQNRDAV-FCFKPDKNESFD-NLVYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYG
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                                                                                                                                                                                                                                                                                        IKKQSRNMNLYSVDGERIVLPRIFISNDKESIKCPCEPERISNSTCNFYVC-----NCVE
                                                                                                                                                                                                                                                                                                                                                                                                 --GASASDQPRQY----EEEMTDYQKIQQGFRQNNREMIKSAFLPVGAFNSDNFKSKGRG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       SKNVRNDWD----KKCPRKNLGNAKFGLWVDGNCEEI-----PYVKEVEAGDLRECNRIVF
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                                                                                                                                                                              NNDK-----YDKMDQAEGYGKPTNTRKDEMLDPEASFWGEDK---RASHTTPVLMEKPY
                                                                                                                                                                                                                                  KRAEIKENNOVVLKEEFRNYYENGEEKSNKOMLLIIIGI-TGGVCVVA-LASMAYFRKKA
                                                                                                                                                                                                                                                                                                                                              FNWANF---DSVKNKCYIFNTKPTCLINDKNFIATTALSHPQEVDLEFPCSIYKDEIERE
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nilarity 25.6%;
Conservative 7
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malaria; parasite; adhesion
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                                                                                                            Protein;
                                                      entry)
                           MAEBL protein sequence SEQ ID NO:5
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Pred. No. 2.4e-24;
5; Mismatches 208
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 molecule;
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  MAEBL;
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  vaccine;
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Best Local :
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87; Conserv
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-MNDLGVCALLKEKPTCVLKKQNYYSFT

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397 334 187 178 133 128

287 217 231

343 274 71

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(MAEBL). Also described is an immunogenic composition comprising an isolated polypeptide and a carrier, where the polypeptide comprises an amino acid sequence, which includes a MAEBL protein cysteine domain. MAEBL polypeptides and compositions containing them are useful as vaccines against malaria, to enhance a cell's resistance to infection by Plasmodium parasites or to alleviate the symptoms associated with the disease. The present sequence represents a MAEBL protein, which is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New erythrocyte binding protein (MAEBL) useful as a vaccine against malaria, for enhancing cell's resistance to infection or for alleviating symptoms associated with the disease
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       erythrocyte binding protein; protozoacide;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The present invention describes an isolated polypeptide (I) comprising
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Example 4; Column 25-34; 31pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         used in the exemplification of the present invention
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasmodium parasite
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NFVTPSGQRISPFPMELLEKNSNIKA---STDLGRCAEFAFKTVAMDKNNKATKYRY---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NSLENARLCPNNEKGNIYR---GSCPDYGKTFSMDLDKDEYSEDFLNEISLGLLNKKLLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TLSASTSGNPFQANVEMKTFMERFNLTHHH------
HSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYT
                                                                   NCESPTKLYD---NSVISFNECIEKLF-NFNYANEDPE--EKRNNYLWGVWVLGNKONKL
                                                                                                                                                                                                                                                    GEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAFISKC-PNQALRGYRFGV--WKKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DVEIPVNMSGLAMYQGLFANCPYDKNHVNDIKNEKEYDMCFDKFYSNKQD------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ELQQPDRL------PYRNNFLEDVPTEKEY------KQSGNPLPGGFNL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TPSIRAIDNP-----QEDFMDRFDILNNHVNIKWTNSGSLAQGNLKFDIYDEDNISSKL
                                                                                                                          RCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQSDQP
                                                                                                                                                                                                 SDNSRNNGRCFSSIKK-EKGKDWTYASSFL--RPD-YETKCPPRYPLNNSEFGYFNYNTG
                                                                                                                                                                                                                                                                                                                                  VETLEDCSIYSHCIGPCFDRDFDNKCFRDLPVAFNHKTKECIIIGTH----EEKKTTNCN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ----ISTRIKKYP--LISKYTYFGSHGLGGRLGSNTEYPLHIYNPIENYRTQKMRYPKL
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Pred. No. 0.26,
52; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                   PEVYDSKKRLCHILYVSMQLMEGKKYCSVK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              151;
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ABG16636
ID ABG16
XX Human
XW Human
XX Homo
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                                                                                                                                                                                                                       CC polypeptide (II) sequences. (I) is useful as hybridisation probes, CC polymerase chain reaction (PCR) primers, oligomers, and for chromosome CC and gene mapping, and in recombinant production of (II). The CC polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques (I). (II) is useful for generating antibodies against it, detecting or cc quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating CC disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in CC diagnostics, forensics, gene mapping, identification of mutations cresponsible for genetic disorders or other traits to assess biodiversity amino acid sequences of data and products dependent on DNA and CC amino acid sequences of the invention.

CC Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO at the polypublished_pct_sequences.
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Matches 129
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                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The invention relates to isolated polynucleotide (I) and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 20;
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23-AUG-2000;
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Human; nootropic; immunosuppressant; cytostatic; gene therapy; cancer; peripheral nervous system; neuropathy; central nervous system; CNS; Alzheimer's; Parkinson's disease; Huntington's disease; haemostatic; amyotrophic lateral sclerosis; Shy-Drager Syndrome; chemotactic; chemotactic; thrombolytic; drug screening; arthritis; inflammation;
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Best Local Similarity
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29-NOV-2000; 2000US-0727344
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Note: The sequence data for this patent did not form part of the printed
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Wang Z
Zhou
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QPDRLPYRNNF---LEDVPTEKEYKQSG-----NPLPGGFNLNFVT----PSGQRISP 145
                                                                                                                                                                                                                     OPHTYPLTSQASWNDWWPLHQSDOPHSGGVG--RNYGFYYVDTTGEGKCALSDOVPDCLV 367
                                                                                                                                                                                                                                                                                                                    SWRNGLSFCAILHHFRPDLIDYKSLNPQDIKENNKKAYDGFASIGISRLLEPSDMVLLAI
                                                                                                                                                                                                                                                                                                                                                                                   IPSPVLGRKPNASQSL-LVWCKE-----VTKNYRGVK------ITNFTT
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                                                                                           ----TADKFPDSFG--ACDVQACKRQKTSCVGGQIQ-----STSVDCTADEQN 449
                                                                                                                          SPSTASPYCRRTKSDTEPQKSQQSSGRTSGSDDPGICSNTDSTQAQVLLGKKRLLKAETL
                                                                                                                                                          SDSAAVSY-----TAAGSLSEETPNFIIPSNPSVTPPTPETALQC------
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Wehrman T, X
Goodrich R,
                                                                                                                                                                                         -AELSDLKREPELQQPISGAVDFLSQDDSVFVNDSGVGESESEHQTPDDHL
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, Xu C, Xue AJ,
R, Drmanac RT;
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Pred. No. 0.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             170;
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Yang Y,
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Zhang ,
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                                                                                                                                                                                                                                                                                                                                                                                                                                   (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical imaging of sites expressing (II). (I) and (II) are useful for treating disorders involving aberrant protein expression or biological activity. The polypeptide and polynucleotide sequences have applications in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and amino acid sequences. ABG00010-ABG30377 represent novel human diagnostic amino acid sequences of the invention.

Note: The sequence data for this patent did not appear in the printed appear in the printed appoint of the printed and the printed are controlled and the printed and the printed and the prin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques to restore normal activity of (II) or to treat disease states involving
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide and encoded polypeptides, useful diagnostics, forensics, gene mapping, identification of mutal responsible for genetic disorders or other traits and to assobiodiversity -
                                                                                                                                                                                                                                                                                                                                                                    Sequence
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N-PSDB; AAS87070.
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23-AUG-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-OCT-2001.
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                                                                                                                                                                                                                                                                                                                                                                                                                   ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                             l Similarity
87; Conser
QLMEGKKYCSVKGE-PPDLTWYCFKPRKSVTENHHLIY-GSAYVG-----ENPDAFISKC
                                                      IPSPVLGRKPNASQSL-LVWCKE-----VTKNYRGVK-----
                                                                                                    FPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSM
                                                                                                                                                                                                         QPDRLPYRNNF---LEDVPTEKEYKQSG-----NPLPGGFNLNFVT-----PSGQRISP 145
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imaging; diagnostic; genetic disorder.
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27-APR-2000;
20-JUN-2000;
The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAM78323-AAW80302) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; cytokine; cell proliferation; cell differentiation; gene th vaccine; peptide therapy; stem cell growth factor; haematopoiesis; tissue growth factor; immunomodulatory; cancer; leukaemia; nervous system disorder; arthritis; inflammation.
                                                                                                                                                                           Claim 20;
                                                                                                                                                                                                                                      Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-SEP-2000;
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2000US-0693325.
2000US-0728422.
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, Zhang J, Ren
n T, Goodrich R;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             activity, tissue growth factor activity, immunomodulatory activity activin/inhibin activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis
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87; Conserv
ELSDLYVSDKKKDMSPPFICEETDEQKLQTLDIGSNLEKEKLENSRSLECRSDPES
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                                                             SPSTASPYCRRTKSDTEPQKSQQSSGRTSGSDDPGICSNTDSTQAQVLLGKKRLLKAETL
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                              TADKFPDSFG--ACDVQACKRQKTSCVGGQIQ-----
                                                                                                                              AELSDLKREPELQQPISGAVDFLSQDDSVFVNDSGVGESESEHQTPDDHL
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                                                                                              -TAAGSLSEETPNFIIPSNPSVTPPTPETALQC-------
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Pred. No. 0.
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RESULT 19
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ID AAM79
XX AAM79
XX AAM79
XX Human
XX Human
XX Human
XX Homo
XX Homo
XX Homo
XX O9-AU
XX W0200
XX W0201
XX W02-FE
XX 03-FE
XX 03-FE
PR 20-JU
PR 119-JU
PR 119-JU
PR 119-SE
                                 03-FEB-2000;
27-APR-2000;
20-JUN-2000;
19-JUL-2000;
                                                                                                                                                                                        Human; cytokine; cell proliferation; cell differentiation; gene th vaccine; peptide therapy; stem cell growth factor; haematopoiesis; tissue growth factor; immunomodulatory; cancer; leukaemia;
          01-SEP-2000;
15-SEP-2000;
                                                                                                                                                                                                                                                                                     AAM79773;
                                                                                        05-FEB-2001;
                                                                                                               09-AUG-2001.
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2000US-0560875.
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Best Local Simi
Matches 87;
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Zhao QA,
Xue AJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAM78323-AAM80302) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polynucleotides and polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. stem cell growth factor activity, haematopoiesis regulating activity, tissue growth factor activity, immunomodulatory activity and activity in the diagnosis and/or activity haematopoiesis regulating activity in the diagnosis and/or activity haematopoiesis regulating activity in the diagnosis and/or activity haematopoiesis regulating activity and may be useful in the diagnosis and/or activity and may be useful in the diagnosis and/or activity and may be useful in the diagnosis and/or activity and may be useful in the diagnosis and/or activity and may be useful in the diagnosis and/or activity and may be useful as the property activity and activity and may be useful as the property activity and activity and may be useful as the property activity and activity and may be useful as the property activity and activity and activity and activity activity and activity activity activity and activity activity activity activity and activity a
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  22-OCT-2001
                                              AAM41108;
                                                                                            AAM41108 standard;
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Wang D,
Yang Y,
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                                                                                                                                                                                                                                                                                                                                                           SDSAAVSY-----TAAGSLSEETPNFIIPSNPSVTPPTPETALQC-----
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                                                                                                                                                                                                                                                                                                                                                                                                         QEKFY----AELSDLKREPELQQPISGAVDFLSQDDSVFVNDSGVGESESEHQTPDDHL
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  (first entry)
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Wang J, Zhang J, Ren
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                                                                                               1023
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ang J, Ren F, C
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Wang
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Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tang
Wang
Zhao
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Novel nucleic acids and polypeptides, useful for such as central nervous system injuries -
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14-SEP-2000;
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Note: The sequen
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29-NOV-2000;
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Zhou P,
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QLMEGKKYCSVKGE-PPDLTWYCFKPRKSVTENHHLIY-GSAYVG-----
                                     IPSPVLGRKPNASQSL-LVWCKE----VTKNYRGVK---
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2000US-0598042.

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2000US-0653450.

2000US-0662191.

2000US-0693036.

2000US-0727344.
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The invention relates to human cytoskeleton-associated polypeptides (CYSKP) and their associated polynucleotide sequences. The sequences are useful in the treatment of disorders associated with overexpression or underexpression of CYSKP in a patient. The disorders include cell proliferative disorders (such as cancer, actinic keratosis, arteriosclerosis, cirrhosis, hepatitis and psoriasis),
                                                                                                                               New cytoskeleton-associated proteins and polynucleotides, useful for diagnosing, preventing and treating cell proliferative, autoimmune, inflammatory, neurological, cell motility, reproductive and muscle
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21-JUN-2000;
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05-JUN-2000;
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, Yao MG,
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87; Conserv
ELSDLYVSDKKKDMSPPFICEETDEQKLQTLDIGSNLEKEKLENSRSLECRSDPES
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AAM78788
 standard;
Protein; 1581
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AAM78788;

06-NOV-2001 (first entry)

Human protein SEQ ID NO 1450

nervous tissue vaccine; sapiens. e; peptide therapy; growth factor; immu cytokine; system disorder; arthritis; cell proliferation; ce therapy; stem cell grou ctor; immunomodulatory; growth inflammation. cell differentiation; yrowth factor; haemator cancer; leukaemia,

09-AUG-2001.

05-FEB-2001; 2001WO-US04098

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Best Local Similarity
Matches 87; Conserv
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19-JUL-2000;
01-SEP-2000;
15-SEP-2000;
20-OCT-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The invention relates to polynucleotides (AAK51456-AAK53435) and the encoded polypeptides (AAM78323-AAM80302) that exhibit activity elating to cytokine, cell proliferation or cell differentiation or which may induce production of other cytokines in other cell populations. The polypeptides are useful in gene therapy, vaccines or peptide therapy. The polypeptides have various cytokine-like activities, e.g. seem cell growth factor activity, haematoposesis regulating activity issue growth factor activity, haematoposesis regulating activity inhibin activity and may be useful in the diagnosis and/or treatment of cancer, leukaemia, nervous system disorders, arthritis and
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Zhao
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27-APR-2000;
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534
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                                                                                                                                                                                                                                            SWRNGLSFCAILHHFRPDLIDYKSLNPQDIKENNKKAYDGFASIGISRLLEPSDMVLLAI 368
                                                                                                                                                                                                                                                             QLMEGKKYCSVKGE-PPDLTWYCFKPRKSVTENHHLIY-GSAYVG-----ENPDAFISKC
                                                                                                                                                                                                                                                                                                                                                                                             QPDRLPYRNNF----LEDVPTEKEYKQSG-----NPLPGGFNLNFVT-----PSGQRISP 145
 ELSDLYVSDKKKDMSPPFICEETDEQKLQTLDIGSNLEKEKLENSRSLECRSDPES 589
                                                                                        SDSAAVSY-----
                                                                                                                                                  QPHTYPLTSQASWNDWWPLHQSDQPHSGGVG--RNYGFYYVDTTGEGKCALSDQVPDCLV
                                                                                                                                                                                                                                                                                                      IPSPVLGRKPNASQSL-LVWCKE-----VTKNYRGVK------ITNFTT
                                                                                                                                                                                                                                                                                                                                   FPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSM 205
                                                                                                                                                                                                                                                                                                                                                                 EPKSTPPPNNLVNPVQELETERRVKRKAPAPPVLSPKTGVLNENTVSAGKDLSTSPKPSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Liu C,
Wang D,
Yang Y,
                                                          SPSTASPYCRRTKSDTEPQKSQQSSGRTSGSDDPGICSNTDSTQAQVLLGKKRLLKAETL
                                                                                                                       QEKFY----ABLSDLKREPELQQPISGAVDFLSQDDSVFVNDSGVGESESEHQTPDDHL
                                                                                                                                                                                                           PNQ-----ALRGYRFGVWKKGRCLDYTELTDTVIERVESKAQCWVKTFENDGVAS-D
                            ----TADKFPDSFG--ACDVQACKRQKTSCVGGQIQ-----STSVDCTADEQN
                                                                                                                                                                                  PDKLTVMTYLYQIRAHFSG------QELNVVQIEENSSKSTYKVGNYETDTNSSVD
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2000US-0560875
2000US-0598075
2000US-0620325
2000US-0620325
2000US-063561
2000US-063351
2000US-063352
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, Wang J, Zhang J, Ren F, C
Wejhrman T, Goodrich R;
                                                                                                                                                                                                                                                                                                                                                                                                                                         3.9%;
                                                                                        TAAGSLSEETPNFIIPSNPSVTPPTPETALQC------
                                                                                                                                                                                                                                                                                                                                                                                                                          55; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 113;
Pred. No. 1
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                                                                                                                                                     367
                                                                                                                       473
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RESULT 23
AAR94957
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           Query Match
Best Local Similarity
                                                                  Human NF-X1 (AAR94957) is a new DNA-binding protein which regulates expression of major histocompatibility complex (MHC) class II molecules. The sequence was deduced from a cDNA clone (AAT18813) isolated from Raji cells. NF-X1 is a cysteine-rich polypeptide which interacts specifically with the conserved X1 box regulatory element (AAT18812) found in the proximal promoters of class II MHC genes. It contains a cysteine-rich domain (see also AAR94955-56) required for both sequence-specific binding and effector function. Overexpression of NF-X1 specifically represses transcription of the HLA-DRA gene. NF-X1 can be obtd. by expression in transformed host cells and is useful in the treatment of allergic disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Region
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAR94957;
                                                Sequence
                                                                                                                                                                                                                 Claim 6; Page 55-58; 93pp; English.
                                                                                                                                                                                                                                       Transcription factor, NF-X1 and DNA encoding it - used in regulation of MHC class II expression and in treatment of allergic disease
                                                                                                                                                                                                                                                                           N-PSDB;
                                                                                                                                                                                                                                                                                                                                    (HARD )
(UYJO )
                                                                                                                                                                                                                                                                                                                                                                        21-OCT-1994;
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UNIV JOHNS HOPK
                                                                                                                                                                                                                                                                                                             Strominger JL,
                                                1104
  Conservative
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417..468
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'label= Cysteine-rich_repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /label= Cysteine-rich_repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     'label= Cysteine-rich_repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99..839
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  label= Cysteine-rich_repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        label= Cysteine-rich_repeat
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                                                                                                                                                                                                                                                                                                                                       HOPKINS
             3.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           factor; major histocompatibility complex; MHC; protein; diagnosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       647
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    521
  61;
  Score 107.5; I
Pred. No. 2.4;
61; Mismatches
                        DB
  159;
                          17;
   Indels 199;
                       Length 1104;
  Gaps
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85 PAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRIS 144

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RESULT 24
ABB97742
ID ABB97742
XX ABB97742
XX Huma
XX Huma
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The present invention relates to hybridoma ciell lines that produce monoclonal antibodies directed against a defined epitope of human (pro)cathepsin W, which are produced by flusing myeloma cells with cells from an animal that has been immunised with recombinant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-APR-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human;
                                                                                                                                Disclosure; Page 17-19; 23pp;
                                                                                                                                                                                  New hybridoma cell lines that produces antibodies specific for human cathepsin W, useful e.g. for diagnosis, therapy and drug targeting
                                                                                                                                                                                                                                                                                                                             Weber
                                                                                                                                                                                                                                                                                                                                                                                                                                 29-SEP-2000;
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                                                                                                                                     German
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          procathepsin W. The antibodies produced are useful for analysis, diagnosis (detection of human (pro)cathepsin W), purification of (pro)cathepsin W (also for clarifying processing of the precursor functional significance of the mature protein), for drug targeting for therapeutic use. The present sequence is a human protein shown exemplification of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               specification.
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                                                                                                                                                                               NNSGLASEKDYPFOGKVRAHRCH---
                                                                                                                                                                                                                                          CCWAMAAAGN-----IETLWRISFWDFVDVSVHELLDCGRCGDGCHGGFVWDAFITV-L
                                                                                                                                                                                                                                                                                                                                DGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSG---NPLPGGFNLN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               further information about this sequence is
----NTCGITKFPLTARVQKPD
                             FYYVDTTGEGKCALSDQV--PD
                                                           GFGSVKSEEGIWAETVSSQS-QPQPPHPTPYWILKNSWGAQWGEKGYFRLHRGS--
                                                                                         --ERVESKAQCWVKTFENDGVASDQPHTYPL-TSQASWNDWWPLHQSDQPHSGGVGRNYG
                                                                                                                      NEHRIAQYLATYGPITVTIN------MKPLQLYRKGVIKATPTTCDPQLVDHSVLLV
                                                                                                                                                   NHHLI----YGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVI---
                                                                                                                                                                                                            DKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTE
                                                                                                                                                                                                                                                                      ---FVTPSGQRISPFPMELLEKNS-----NIKASTDLGRCAE-----FAFKTVAM
                                                                                                                                                                                                                                                                                                      ----YRRAAGGVPSMGREIRSEEPE-----ESVPFSCDWRKVAGAISPIKDQKNCN
                                                                                                                                                                                                                                                                                                                                                               IFAHNLAQAQRLQEEDLGTAEFGVTPFS------DLTEEEFGQLYG------
                                                                                                                                                                                                                                                                                                                                                                                            IFASGLSSSTRSRESQTLSASTSGNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              355 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                         44; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 104; DB 23;
Pred. No. 0.88;
                             364
                                                                                                                                                                                -----PKKYQKV-----AW--IQDFIMLQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 355;
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                                                   Cheever MA,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
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                                                                                                                                   (CORI-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-AUG-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HER-2/neu; oncogene; tyrosine kinase; cytostatic; vaccine; cancer; prostate cancer; ovarian cancer; lung cancer;
                                                                                                                                   CORIXA CORP.
SMITHKLINE BEECHAM
                                                   Gheysen
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Matches 108
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present sequence is the human HER-2/neu protein. It is a member of the tyrosine Kinase family of receptor-like glycoproteins and show that the tyrosine Kinase family of receptor-like glycoproteins and show the manual state of the probably homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. An HER-2/neu fusion protein comprising a HER-2/neu extracellular domain fused to a HER-2/neu phosphorylation domain may be used to treat or prevent cancer by eliciting or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2000-505976/45.
N-PSDB; AAA89736.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 enhancing an immune response to the HER-2/neu protein. It may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Disclosure; Fig 15; 128pp; English.
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Streptococcus polypeptide SEQ
                                02-JUL-2002
                                                                                                ABP25604 standard;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     these neoplasias.
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                                                                                                                                                                                                              473
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               neu extracellular domain/phosphorylation domain fusion proteins for vaccinating against breast, ovarian, colon, lung and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KKRLCH-----SVKGEPPDLTWYCFKPRK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LYREPAGLCPIWGKHIELOOPDRLPYRNNFLEDVPTEKEYKOSGNPLPGG---FNLNFVT
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                                                                                                                                                                                                                G 473
                                                                                                                                                                                                                                                                             PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL
                                                                                                                                                                                                                                                                                                              HCLPCHPE-CQPQNGSVTCFGPE-
                                                                                                                                                                                                                                                                                                                                             SLSEETPNFIIPSNPSVTPPTPETALQCTAD------KF
                                                                                                                                                                                                                                                                                                                                                                           RPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
                                                                                                                                                                                                                                                                                                                                                                                                            QPHSGGVGRNYGFYYVDTTGE-----GKCALSDQ-----VPDCLVSDSAAVSYTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                            L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH-----QAL-----LHTAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QVFÉTLEETTGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
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                                                                                                                                                                                                                                              PDEEGAC
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                                (first entry)
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                                                                                                  Protein;
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22.5%;
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Pred. No. 5
 ID NO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                             -ADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
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                                                                                                                                                                                                                                                                                                                                                                                                                    CC Streptococcus gyogenes), comprising one of 5483 sequences (S1), given in Ct the specification. The proteins have antibacterial and antiinflammatory CC activity. (1), nucleic acids encoding (1), ABN66044-ABN71826 and CC antibodies that bind (1) are used in the manufacture of medicaments for Ct the treatment or prevention of infection or disease caused by Streptococcus bacteria, particularly S. agalactiae and S. pyrogenes.

CC Nucleic acids encoding (1) are used to detect Streptococcus in a biological sample. (1) is used to detect Streptococcus in binds to CC biological sample. (1) is used to detect acid encoding (1), may be used as a vaccine or diagnostic composition. The disease caused by CC Streptococcus that is prevented or treated may be meningitis. Nucleic CC acid encoding (1) may be used to recombinantly produce (1) and may be used in gene therapy. Antibodies to (1) are used for affinity corrections.
                                                                                                                                                                                                                                                                                                       Query Match
Best Local Sim
Matches 91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      27-OCT-2000;
24-NOV-2000;
07-MAR-2001;
                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 1; Page 3194; 4525pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                or disease caused
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcus pyogenes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       group A streptococcus; Streptococcus pyogenes; antibacterial;
antiinflammatory; infection; vaccine; meningitis; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Streptococcus; GAS; GBS; group B streptococcus; Streptococcus agalactiae; group A streptococcus; Streptococcus pyogenes; antibacterial;
                                                                                                                                                                                                                                                                                                                                                                                                         Streptococcus proteins.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to a protein (ABP25413-ABP30895) from group
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New Streptococcus
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308
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INST GENOMIC RES
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SDQPHTYPLTSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLV
                                                                                                                                  RLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKS---VTENHHLIYGSAYV----
                                                                                                                                                                     WDILEEVIKEHPVLLNRAPTLHRLGIQAFEPVLID--GKALRL-HPLVCEAYNADFDGDQ
                                                                                                                                                                                                                                                                     PTEKEYKQSGNPLPGGFNLNFVTPSGQRISPFPM-ELLEKN--SNIKA------
                                 GREGEGMIFKDKDEAVMAYRNG-----YAHLHSRV-----
                                                                 GENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIERVESKAQCWVKTFENDGVA
                                                                                                  MAIHV-PLSEEAQAEARLLMLAAE-----HILNPKDGKPVVTPSQDMVLGNYYLTMEDA
                                                                                                                                                                                                                                       PTLKMY-QCGVPREMAIEL-----FKPFVMREIVAKEYAGNVKAAKRMVERGDERI
                                                                                                                                                                                                                                                                                                                                                                         1213 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Masignani V,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; 2000GB-0026333.
; 2000GB-0028727.
; 2001GB-0005640.
                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2001WO-GB04789
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              protein for the treatment or prevention of infection by Streptococcus bacteria, such as meningitis, and ompound that binds to the protein -
                                                                                                                                                                                                                                                                                                                      3.6%;
                                                                                                                                                                                                    -STDLGRCAEFAFKTVAMDKNNKATKYRYPFV-----YDSKK 195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Margarit Ros
                                                                                                                                                                                                                                                                                                          55;
                                                                                                                                                                                                                                                                                                       Score 104; DB 23; Pred. No. 6; 5; Mismatches 165;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YI,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Grandi
                                                                                                                                                                                                                                                                                                                                        Length 1213;
                                                                                                                                                                                                                                                                                                          Indels 160;
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                                    ---GIA
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   367
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232

339

137 297

397 276

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RESULT 27
AAW01111
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  Best Local Sin
Matches 108;
                         Query Match
                                                                               Human HER-2/neu protein (AAW01111), also called p185 or c-erbB2, is the product of the HER-2/neo oncogene (see also AAT40739). The protein is over-expressed in various cancers, including breast, ovarian, colon, lung and prostate. The intracellular domain of the protein can be used to immunise an animal against a malignancy with which the oncogene is associated. The polypeptide can be produced in transformed host cells for use in immunisation. Alternatively, animal cells are transfected in vivo or ex vivo with a viral vector
                                                 Sequence
                                                                      that directs expression of the polypeptide
                                                                                                                                                                                            Claim 2; Page 56-61; 71pp; English
                                                                                                                                                                                                                     associated
                                                                                                                                                                                                                                DNA encoding treatment of
                                                                                                                                                                                                                                                                     N-PSDB;
                                                                                                                                                                                                                                                                                WPI; 1996-455361/45.
                                                                                                                                                                                                                                                                                                         Cheever MA,
                                                                                                                                                                                                                                                                                                                                                        31-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                                28-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                        03-OCT-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                               WO9630514-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Кeу
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HER-2/neu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-JAN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW01111;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW01111 standard;
                                                                                                                                                                                                                                                                                                                                 (UNIW)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Domain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    breast cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HER-2/neu; c-erbB1; p185; oncogene; tyrosine protein kinase;
breast cancer; ovary cancer; colon cancer; lung cancer;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         619
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 Similarity 22.5%;
OB; Conservative (
                                                                                                                                                                                                                                                                                                                                UNIV WASHINGTON:
                                                                                                                                                                                                                                                                     AAT40739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        cancer; immunisation; tumour;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RLDRNKG--VQAAHHEHEFQSDRGARKKRPSDLMQEAEPSFWDEAEENIEQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGACDVQACKRQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VDSMPNKP---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KN--LGNIIAETFKRFRTTETSAFLDRLKDLGYYHSTLAGLTVGIADIPVI----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KTSCVGG-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         --- DNKAEIIDAAHHRVEEINKAFRRGLMTDDDRYVAVTTTWREAKEALEK 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       protein
                                                 1255 AA;
                                                                                                                                                                                                                               HER-2-neu poly:peptide(s) - malignancies with which the
                                                                                                                                                                                                                                                                                                       Disis ML;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first
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                                                                                                                                                                                                                                                                                                                                                                              96WO-US01689
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
676..1255
/label= Intracellul
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /label= Intracellular_domain
/note= "claimed domain, usefo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               entry)
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  43;
 Score 104; DB
Pred. No. 6.3;
43; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      useful for immunisation"
            .3;
                                                                                                                                                                                                                               used for prevention HER-2/neu oncogene i
  174;
                      17;
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                      Length 1255;
  Indels
 156;
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Gaps
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ID AAW92
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                                                                      01-APR-1996;
17-MAR-1993;
12-AUG-1993;
31-MAR-1995;
                                                                                                                                                                                                                                                                                                                                                                  AAW92406;
 WPI; 1999-152835/13.
                       Cheever
                                                                                                                                 01-APR-1996;
                                                                                                                                                         09-FEB-1999
                                                                                                                                                                               US5869445-A
                                                                                                                                                                                                                    Region
                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                              malignancy; treatment; tumour.
                                                                                                                                                                                                                                                                                                                   Human HER-2/neu
                                                                                                                                                                                                                                                                                                                                           21-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                          AAW92406 standard; Protein; 1255 AA
                                                                                                                                                                                                                                                                                         HER-2/neu; oncogene; immune response;
                                               (UNIW ) UNIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   617
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             256 LHFNHSGIC-----ELHCPALVTYNTDTPESMPN-----PEGRYTFGASCVT
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                       ¥,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QPHSGGVGRNYGFYYVDTTGE-----GKCALSDQ-----VPDCLVSDSAAVSYTAAG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HCLPCHPE-CQPQNGSVTCFGPE-ADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SLSEETPNFIIPSNPSVTPPTPETALQCTAD------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH-----QAL-----LHTAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KKRLCH-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AC-----PYNYL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LDYTELTDTVIERVESKAQCWVKTFENDGVASDQ----PHTYPLTSQASWNDWWPLHQSD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                     899
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           473
                       Disis ML;
                                               WASHINGTON.
                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                      96US-0625101.
93US-0033644.
93US-0106112.
95US-0414417.
                                                                                                                                 96US-0625101
                                                                                                                                                                                                                   Location/Qualifiers 676..1255
                                                                                                                                                                                                                                                                                                                  oncogene
                                                                                                                                                                                                          /note=
                                                                                                                                                                                                       "region which elicits immune response"
                                                                                                                                                                                                                                                                                                                 protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -ILYVSMQLMEGKKYC------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               --STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
                                                                                                                                                                                                                                                                                           T cell;
                                                                                                                                                                                                                                                                                          B cell;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -SVKGEPPDLTWYCFKPRK
                                                                                                                                                                                                                                                                                           immunisation;
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SXCCCCCCX PX PTTXX

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RESULT 29
AAB21198
ID AAB21
XX AAB21
XX AAB21
XX I2-JA
DT 12-JA
DT Human
XX Human
XX Human
XX Colon
XX Colon
XX Colon
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Best Local S
Matches 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This sequence represents the human HER-2/neu oncogene protein. A fragment of this protein is used in a method for eliciting or enhancing an immune response to HER-2/neu protein. The polypeptide can stimulate T cells and B cells to produce an immune response to the HER-2/neu protein. The method can be used for immunisation against a malignancy in which the HER-2/neu oncogene is associated and in the treatment of an existing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Use of HER-2/neu polypeptides - for eliciting an immune response an HER-2/neu associated malignancy, particularly for treating or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         tumour, or to prevent tumour occurrence or reoccurrence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              preventing tumours
                                    Human; HER-2/neu; oncogene; tyrosine kinase; cytostatic; vaccine;
breast cancer; prostate cancer; ovarian cancer; lung cancer;
                                                                                                                                                                                                         AAB21198 standard;
                     colon
                                                                                                                                 12-JAN-2001
                                                                                                                                                                                                                                                                                                                                       47,3
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                     cancer
                                                                                             HER-2/neu
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KKRLCH------ILYVSMQLMEGKKYC-----SVKGEPPDLTWYCFKPRK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Column 31-38; 26pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LHFNHSGIC-----ELHCPALVTYNTDTFESMPN-----PEGRYTFGASCVT
                                                                                                                                                                                                                                                                                                                                                                            PDEEGAC--QPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                    HCLPCHPE-CQPQNGSVTCFGPE-ADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SLSEETPNFIIPSNPSVTPPTPETALQCTAD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
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Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence is the human HER-2/neu protein. It is a member of the tyrosine kinase family of receptor-like glycoproteins and shows homology to the epidermal growth factor receptor (EGFR). It probably plays a part in cell growth and/or differentiation. The HER-2/neu gene is an oncogene. An HER-2/neu fusion protein comprising a HER-2/neu extracellular domain fused to a HER-2/neu phosphorylation domain may be used to treat or prevent cancer by eliciting or enhancing an immune response to the HER-2/neu protein. It may be used to treat malignancies such as breast, ovarian, colon, lung and prostate cancers, and may be used as an antigen to vaccinate against
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 52; Fig 7; 128pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HER-2/neu extracellular domain/phosphorylation domain fusion proteins useful for vaccinating against breast, ovarian, colon, lung and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; AAA89736
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                                                                                                                                                                                                                                                                                                   QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
                                                                                                                                                                                                                                                                                                                                           SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AC----PYNYL-----STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LHFNHSGIC----ELHCPALVTYNTDTFESMPN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT 137
                                                                             HCLPCHPE-COPONGSVTCFGPE-ADOCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS
     PDEEGAC--OPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVL
                                      PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL
                                                                                                                                                     RPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
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ilarity 22.5%;
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Pred. No. 6.3;
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Best Local :
                                                                                                                                                                                                                                                                                       protein has an in-frame deletion of 16 amino acids, 2 of which are conserved cysteine residues, compared to the unspliced protein. The erbb-2 polynucleotide is used to construct probes for detecting disorders of cell transformation such as cancer. Antibodies to the protein may be used to detect SPLICE erbB-2 in a sample. Agents (e.g. antisense oligonucleotides) which inhibit the expression of SPLICE erbB-2 are useful for reducing tumor cell proliferation and treating cancer. Substances which stimulate SPLICE erbB-2 are useful for the splice of t
                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The present sequence represents a SPLICE erbB-2 receptor protein. orotein has an in-frame deletion of 16 amino acids, 2 of which are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 3; Fig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nucleic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SPLICE erbB-2 receptor protein; cell transformation disorder; tumor cell proliferation; tissue degeneration; arthropathy; bone resorption; inflammatory disease; degenerative disorder;
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tumor cell proliferation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Amino acid sequence of the SPLICE erbB-2 receptor
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                                                  AC-----PYNYL-----STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
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                                                                                                                        ELHCPALVTYNTDTFESMPN---
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Pred. No. 6.3;
3; Mismatches 174;
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                                                                                                                                                                                                                 PDEEGAC -- QPC -- - PINCTHSCVDLDDKGCPAEQR -- ASPLTSIIS -- AVVGILLVVVL
                                                                                                                                                                                                                                                           PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL 472
                                                                                                                                                                                                                                                                                                       HCLPCHPB-CQPQNGSVTCFGPE-ADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
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AAB85458 standard; Protein; 1255 AA.

AAB85458;

25-SEP-2001 (first entry)

Human HER-2/neu

protein

Antigen-presenting cell; immunogenic; immune response; HER-2/neu; oncogene; cancer; cytostatic; vaccine; p185; c-erbB2.

Homo sapiens.

WO200153463-A2

26-JUL-2001.

19-JAN-2001; 2001WO-US01850

21-JAN-2000; 2000US-0177545

(CORI-) CORIXA CORP

Cheever MA, Hand-Zimmermann ŝ

WPI; 2001-476112/51.

N-PSDB;

AAH23392

New antigen-presenting cells, useful as vaccines for eliciting cenhancing an immune response to HER-2/neu protein, particularly for treating or preventing cancer, e.g. breast cancer ç useful

Claim 2; Page 41-46; 49pp; English

The invention provides an isolated antigen-presenting cell, which expresses at least an immunogenic portion of a polypeptide that produces an immune response to HER-2/neu protein. The antigen-presenting cells are useful as vaccines for eliciting or enhancing an immune response to HER-2/neu protein, particularly in treating or preventing malignancies in which the HER-2/neu oncogene is associated. Specifically, these are useful for treating colon, lung or prost the human HER-2/neu for treating or preventing cancer, e.g. breast cancer, ov. lung or prostate cancers. The present sequence represents an HER-2/neu protein (also known as p185 or c-erbB2). ovarian, are 'n

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RESULT 32
AAG88267
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Best Local
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               Fikes J,
Keogh E;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                  Human; HER2/neu; epitope; human leukocyte antigen; HLA; T cell; immune response; vaccine; tumour; cancer; cytostatic; immunostimulant; tumour-associated antigen; T lymphocyte; cytotoxic T lymphocyte; CTL.
                                                                                                                                                                                        HER2/neu amino acid sequence.
                                                                                                                                                                                                          11-SEP-2001
                                                                                                                                                                                                                                            AAG88267 standard; Protein; 1255
WPI; 2001-374995/39
                                                             10-DEC-1999;
                                                                              11-DEC-2000; 2000WO-US33591
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                                                                                                                                                                                                                                                                                                                                          PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL 472
                                                                                                                                                                                                                                                                                                                                                                               SLSEETPNFIIPSNPSVTPPTPETALQCTAD-----KF
                                                                                                                                                                                                                                                                                                                                                                                                                  QPHSGGVGRNYGFYYVDTTGE-----GKCALSDQ-----VPDCLVSDSAAVSYTAAG
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                           Sidney J,
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An isolated prepared HER2/neu epitope useful in a vaccine for cellular immune responses for the prevention and treatment of inducing

199pp; English.

CC The present invention describes isolated prepared HER2/neu epitopes (I).

CC Also described are: (1) a clonal cytotoxic T lymphocyte (CTL) that is

CC Culture in vitro and binds to a complex of an epitope (I), bound to a

CC human leukocyte antigen (HLA) molecule; (2) a peptide (II) comprising (I)

CC and a second epitope and the peptide is less than 50 contiguous amino

CC colds that have 100% identity with a native peptide sequence of HER2/neu;

CC (3) a vaccine composition (III) comprising (II) and a pharmaceutical

CC excipient; (4) an isolated nucleic acid encoding a peptide comprising

CC (I); and (5) an isolated nucleic acid encoding (II). (I) has cytostatic

CC and immunostimulant activities, and can be used in vaccines. (I), (II)

CC and (III) are useful for inducing cellular immune responses for the

CC prevention and treatment of cancer. (I) and (II) are useful for

CC monitoring or evaluating an immune response to a tumour-associated

CC antigen when incubated with a T lymphocyte sample form a pattent and

CC to sated vaccines mean that immunosuppressive epitopes that may be present

CC based vaccines mean that immunosuppressive epitopes that may be present

CC in whole antigens may be avoided. Selected epitopes may be combined to

CC infectious agents or whole protein antigen is eliminated. The vaccine

CC selected antigens from the same pathological side effects caused by

infectious agents or whole protein antigen is eliminated. The vaccine

CC selected antigens from the same pathological side effects caused by

infectious agents or whole protein antigen is eliminated. The vaccine

CC selected antigens from the same pathological side effects caused by

infectious agents or whole protein antigen is eliminated. The vaccine

CC selected antigens from the same pathological side effects caused by

considered to composity to considered molecules addressing the problem of tumour

considered to antigen of tumour escape due to

antigen loss. AAG88266. to AAG892121 represent amino acid sequences used in the exemplification of the present invention.

1255 AA;

DB 22;

Length 1255;

194 KKRLCH------ILYVSMQLMEGKKYC-----SVKGEPPDLTWYCFKPRK G 473 HCLPCHPE-CQPQNGSVTCFGPE-ADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF LDYTELTDTVIERVESKAQCWVKTFENDGVASDQ----PHTYPLTSQASWNDWWPLHQSD --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS LHFNHSGIC-----ELHCPALVTYNTDTFESMPN-----PEGRYTFGASCVT LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT 137 PDEEGAC--OPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVL PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL 472 SLSEETPNFIIPSNPSVTPPTPETALQCTAD-----RPEDECVGEGLACHOLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR QPHSGGVGRNYGFYYVDTTGE-----GKCALSDQ-----VPDCLVSDSAAVSYTAAG QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC L--RELGSGLALIHHNTHLCFVHT----VPWDQLFRNPH-Conservative 3.6%; 43; ---STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---Score 104; DB Pred. No. 6.3; Mismatches 174; Indels 156; -----QAL-----LHTAN ----KF Gaps 379 332 457 397 193 412 558 498 276 297 616 27

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RESULT 33
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel antisense oligonucleotide which modulates the expression Epidermal Growth Factor receptor, Her2, is useful for treating inflammation or to prevent infection in humans -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
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QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
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                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 104; DB Pred. No. 6.3;
                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
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human
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28-SEP-2000;
                                                                                                    Disclosure;
                                                                                                                     Novel isolated Her-2/Neu polypeptide composition useful for therapy, prevention and diagnosis of cancer, preferably breast cancer
                                                                                                                                                         WPI; 2002-280758/32.
                                                                                                                                                                             Hand-zimmermann S, (
Mcneill PD, Vedvick
                                                                                                                                                                                                                                                                14-AUG-2001; 2001WO-US41733.
                                                                                                                                                                                                                                                                                    21-FEB-2002
                                                                                                                                                                                                                                                                                                     WO200214503-A2
                                                                                                                                                                                                                                                                                                                                 Region
                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                          Human Her-2/neu protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                               AAE20479;
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                                                                                                                                                                                                         (CORI-) CORIXA CORP
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                                                                                                                                                                                                                                                                                                                                                                              leukocyte
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                                                                                                   Page 114-117; 129pp; English.
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2001US-270520P.
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antigen; HLA;
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k TS;
                                                                                                                                                                                                                                                                                                                      "Naturally processed HLA-B44-restricted epitope"
                                                                                                                                                                                                                                                                                                                                                                              immune response; gene therapy; breast ILA; vaccine; malignancy; cytostatic.
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The invention relates to an isolated Her-2/Neu polypeptide composition effective for eliciting an immune response. The invention is useful for eliciting an immune response in a patient, where the patient is human leukocyte antigen (HLA)-B44 positive or is affected with breast cancer. The composition is useful for the therapy and diagnosis of cancer, preferably breast cancer, in pharmaceutical compositions, e.g., vaccine and other compositions for the diagnosis, prevention and treatment of human malignancies, for stimulating and/or expanding T cells specific for Her-2/Neu polypeptide and for inhibiting the development of cancer in a patient. The invention is useful for stimulating a T cell response in a

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RESULT 35
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Matches 108;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human patient, as probe or primer for nucleic acid hybridisation, to selectively form duplex molecules with complementary stretches of the entire Her-2/Neu gene or gene fragments of interest, to isolate a full length gene from a suitable library, and to direct expression of a polypeptide in appropriate host cells. The composition is useful in prophylactic or therapeutic applications and for the treatment of cancer, preferably for the immunotherapy of breast cancer and other Her-2/Neu-associated malignancies. The invention is useful in gene therapy. The
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      present sequence is human Her-2/neu protein.
                                                                                                                                      Her-2/neu; oncogene; cancer; tumour; vaccine; human; p185;
                                                                                                                                                                        Human
                                                                                                                                                                                                     17-JUN-2002
              Domain
                                             Domain
                                                                                            Homo sapiens
                                                                                                                         cyrosine
                                                                                                                                                                                                                                                                 AAM51143 standard; Protein;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HCLPCHPE-COPONGSVTCFGPE-ADOCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH-----QAL-----LHTAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       KKRLCH-----SVKGEPPDLTWYCFKPRK
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                                                                                                                       kinase;
                                                                                                                                                                                                                                                                                                                                                                                                         PDEEGAC--QPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVL
                                                                                                                                                                                                                                                                                                                                                                                                                                     PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL
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                                                                                                                                                                                                   (first entry)
                                                                                                                                                                     oncogene-encoded p185 glycoprotein.
                                                          Location/Qualifiers
                             /note= "extracellular domain"
                                                                                                                       receptor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3.6%;
"intracellular domain"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43; Mismatches
                                                                                                                         c-erbB2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 104; DB Pred. No. 6.3;
                                                                                                                         therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1255;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -----KF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 intracellular domain that also shows homology to EGFR. Its overexpression correlates with a poor prognosis in breast and coverexpression correlates with a poor prognosis in breast and coverexpression correlates with a poor prognosis in breast and coverian cancers. The invention provides Her-2/neu fusion ovarian cancers acids encoding them, viral vectors, and vaccines comprising the fusion proteins, the extracellular domain of a Her-2/neu protein is fused to a Her-2/neu intracellular domain of a Her-2/neu protein is peltapb fragment). An immune response to Her-2/neu protein is elicited or enhanced by administering the fusion protein is elicited or enhanced by transfecting cells of an animal ex vivo with a nucleic acid encoding the fusion protein, and delivering the transfected cells to the animal. The fusion proteins, mucleic acids, and isolated specific T-cells are useful for inhibiting the development of a cancer, especially breast, ovarian, colon, lung or prostate cancer in a patient. T cells that specifically react with a Her-2/neu fusion protein can be used to remove tumour cells from a sample in
                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Her-2/neu fusion protein for treating or preventing cancer by eliciting or enhancing an immune response to the protein, has Her-2/neu extracellular domain fused to Her-2/neu intracellular or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    family of receptor-like glycoproteins. It comprises an extracellu domain with homology to the epidermal growth factor receptor (EGFR), a highly hydrophobic transmembrane domain and a C-terminal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  or c-erbB2), an oncogenic self-protein and target for anti-cancer vaccines. The Her-2/neu gene is amplified and p185 is overexpressed in a variety of cancers, including breast, ovarian, colon, lung and prostate cancer. Her-2/neu is a member of the tyrosine kinase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present sequence is that of human Her-2/neu (p185 glycoprotein or c-erbB2), an oncogenic self-protein and target for anti-cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 68; Fig 7; 141pp; English
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                                                                                                                                                                                                                                                                                                                                                                                              Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                    tusion protein
order to inhibi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (SMIK)
                                                               340 -- RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
                                                                                                                                                                                                                                                                                                               108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CORIXA CORP.
SMITHKLINE BEECHAM BIOLOGICALS
                                                                                                                                                                                                                                                                                                                                    Similarity
SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG------YRFGV-WKKGRC 276
                                                                                                                                                                                                                                                                  LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT 137
                                                                                                                                                                                                                              LHFNHSGIC-----ELHCPALVTYNTDTFESMPN-----PEGRYTFGASCVT
                                                                                                                                                                                                                                                                                                                                                                                                                                        inhibit the
                                                                                                                                                AC----PYNYL-----STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
                                                                                                                                                                                      PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS
                                                                                                                                                                                                                                                                                                                                                                                                1255
                                                                                                                                                                                                                                                                                                               Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                AA;
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                                                                                                                                                                                                                                                                                                                                  22.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                        development of cancer in a patient.
                                                                                                          -ILYVSMQLMEGKKYC--
                                                                                                                                                                                                                                                                                                               43;
                                                                                                                                                                                                                                                                                                               Score 104; DB Pred. No. 6.3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 It comprises an extracellular
                                                                                                                                                                                                                                                                                                                                                       23;
                                                                                                                                                                                                                                                                                                                                                     Length 1255;
                                                                                                                                                                                                                                                                                                                   Indels 156;
                                                                                                          SVKGEPPDLTWYCFKPRK 232
                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                            193
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RESULT 36
AAU77114
                         haematological malignancy in a patient by administering a polypeptide comprising an immunogenic portion of Her-2/neu or a polynucleotide encoding the polypeptide. Antigen presenting cells that express the protein can also be administered. The sequences are used for inhibiting development of haematological malignancy such as acute myelogenous leukaemia (AML), chronic myelogenous leukaemia (CML), chronic lymphocytic leukaemia (CLL), MDS, myelomas, Hodgkin's leukaemia (CLL), MDS, myelomas, 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       encoding the polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Inhibiting haematological malignancy development by administering polypeptide comprising immunogenic portion of Her-2/neu, polynucleotide encoding the polypeptide, or antigen presenting cells expressing the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; Her-2/neu; cytostatic; haematological malignancy; CML; acute myelogenous leukaemia; CLL chronic myelogenous leukaemia; CLL chronic lymphocytic leukaemia; myeloma; non-Hodgkin's lymphoma; MDS; Hodgkin's lymphoma; T cell therapy.
                                                                                                                                                                                                                                                                                                                      The invention relates to a method for inhibiting development of
                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 71-74; 74pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaiger
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28-SEP-2000;
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Human; colon cancer; colon cancer antigen; diagnosis; detection; identification; cytostatic; cardioactive; neuroprotective; vulne: immunomodulatory; muscular; gynaecological; gastrointestinal; nephrotropic; antiinfective; antibacterial; gene therapy; wound; neural disorder; humane system disorder; muscular disorder; reproductive disorder; gastrointestinal disorder; renal disorder. infectious disease; cardiovascular disorder.
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Best Local :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     neuroprotective, immunomodulatory, gynaecological, gastrointestinal, vulnerary, nephrotropic, antiinfective and antibacterial activities, and can be used in gene therapy. The colon cancer antigen polynucleotides, proteins and antibodies to the proteins are useful for the prevention, treatment and diagnosis of colon disorders, such as colon cancer. The polynucleotides may be used in diagnostics and research, such as for chromosome identification, and as hybridisation probes. The proteins may also be used to prevent diseases such as neural disorders, immune system disorders, muscular disorders, reproductive disorders, gastrointestinal disorders, wounds, renal disorders, infectious diseases, and cardiovascular disorders. AAC98764 to AAC98772 and AAB54007 represent sequences used in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAC97991 to AAC98763 encode the human colon cancer associated proteins, called human colon cancer antigens, given in AAB53234 to AAB54006. The human colon cancer antigens can have cytostatic, cardioactive, muscular;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Colon cancer associated gene sequences, referred to antigens, useful for the treatment, prevention, and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 11; Page 1395-1396; 2104pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 disorders such as colon cancer -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          08-MAR-2000;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21-SEP-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
QKTSCVGGQIQSTSVDCTAD-----EQNECGS:
                                                                                                                                                                                                                                                                      QLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRG
                                                                                                                                                                                                                                                                                                                                   FPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSM
                                                                                                                                                                                                                                                                                                                                                                                                 PDRLPYRNNFLEDVPTEKE----YKQSGNP-----LPG---
                                              --- LVPPSNPLCSQSGQTSVGGSTALRCSSSEGAPKPVYNWVRLGTFPTPSPGSMVQ----
                                                                               PNFIIPSNP----SVTPPTPETALQCTADK----
                                                                                                                                          WPLHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEET
                                                                                                                                                                           HLYPTGSKSKRVSLLQNPPTV----
                                                                                                                                                                                                       YRFGVWKKGRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDW
                                                                                                                                                                                                                                      ----TYSTSVGDSFALEWSFVQPGKPISESHPILYFT----
                                                                                                                                                                                                                                                                                                                                                                  PGGCPWVLPSLPDTQTDLDRPPGRSRTGRPDAAMAELPGPFLCGALLGFLCLSGLAVEVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ruben SM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               365
                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                 48;
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Pred. No. 1;
48; Mismatches
                                                                                                              TGTYLCQVNNP-PDFYTNGLGLINLTV-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                 121;
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diagnosis of co
                  ---NTALIAGLAVG---
                                                                                FPDSFGACDVQACKR
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RESULT 39
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                                                           Matches
                                                                         Query Match
Best Local
                                                                                                                                                                                                 cancer-associated nucleic acid molecules (N) and proteins (P), where the proteins are collectively known as colon cancer antigens. The colon cancer antigens have cytostatic activity and can be used in gene therapy and vaccine production. N and P may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate P expression. For example, N and P may be used to treat disorders associated with decreased expression by rectifying mutations or deletions in a patient's genome that affect the activity of P by expressing inactive proteins or to supplement the patients own production of P. Additionally, N may be used to produce the colon cancer-associated Ps, by inserting the nucleic acids into a host cell and culturing the cell to express the proteins. N and P can be used in the prevention, diagnosis and treatment of colorectal carcinomas and cancers. AAH37196 to AAH37204 and AAB77789 represent sequences used in the exemplification of the
                                                                                                                                                                             present invention.
N.B. Pages 666 to
                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nucleic acids encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; colon cancer; colon cancer antigen; colorectal carcinoma; chromosome 11.
                                                                                                                                               SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                             AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      useful for preventing,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ruben SM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       29-SEP-1999;
03-NOV-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human colon cancer antigen protein
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                                                                                                                                                         .B. Pages 666 to 682 and page 7053 of the issing at time of publication, meaning no
                                                                       Local
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                           101 PDRLPYRNNFLEDVPTEKE----YKQSGNP-----LPG----GFNLNFVTPSGQRIS-P
                                                                                                                                             NO:1027 to 1052, 7921 and 7922.
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                                                           93,
                                                                         Similarity
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PGGCPWVLPSLPDTQTDLDRPPGRSRTGRPDAAMAELPGPFLCGALLGFLCLSGLAVEVK 65
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                                                                                                                                                                                                                                                                                                                                                                                                                                         Page 7849-7851; 9803pp; English.
                                                                                                                   365
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99US-0163280,
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                                                                       3.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4277 human colon cancer-associated polypeptides, diagnosing and/or treating colorectal cancers -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Birse CE,
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                                                      Score 103.5;
Pred. No. 1;
18; Mismatches
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                                                                                     DB 22;
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s are present
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                     Claim 21; Page 134-138;
                                               an antigen
                                                        Inducing a cell-mediated immune response against a target antigen, reducing undesired cells and stimulating presentation of an antige a cell, comprises administering a polynucleotide encoding a varian
                                                                                                                                                                                       (AMBI-)
(MINC/)
(LOUK/)
                                                                                                                                                                                                                                     01-NOV-2000;
                                                                                                                                                  Mincheff
                                                                                                                                                                                                                                                               01-NOV-2001; 2001WO-US45626.
                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                   Human; Her2; cytostatic; antiviral; immunostimulant;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Human breast cancer antigen,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-SEP-2002
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                                                                                                             WPI; 2002-527524/56.
N-PSDB; ABK86207.
                                                                                                                                                                                                                                                                                        23-MAY-2002.
                                                                                                                                                                                                                                                                                                                 WO200240059-A2
                                                                                                                                                                                                                                                                                                                                                                  human immunodeficiency
                                                                                                                                                                                                                                                                                                                                                                                         virus infection;
                                                                                                                                                                                                                                                                                                                                                                                                        cell-mediated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAU98923;
                                                                                                                                                                                                                                                                                                                                                                               lymphoma; leukaemia; hepadnavirus;
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                                                                                                                                                                                    AMERICAN FOUND BIOLOGICAL MINCHEFF M S. LOUKINOV D I.
                                                                                                                                                  MS,
                                                                                                                                                                           ZOUBAK S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VLLLSV---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSM 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       standard;
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                                                                                                                                                  Loukinov
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                                                                                                                                                                                                                                                                                                                                                              prostate cancer; colorectal cancer; pancreatic mia; hepadnavirus; lentivirus; herpesvirus; ciency virus; HIV; flavivirus; pestivirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protein; 1223
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                                                                                                                                                  DI,
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                     146pp; English.
                                                                                                                                                  Zoubak
                                                                                                                                                                                                                                                                                                                                                                                                                                             Her2 variant.
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                                                                                                                                                                                                                RES
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                                                           antigen
variant
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invention relates to a method of inducing a cell-mediated immune

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Search completed: October Job time: 89 Becs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               response against a cell comprising a target antigen (I) in a subject, treating a subject having undesired cells, for example tumour cells or virally infected cells (C), reducing the number of (C) in a subject, and stimulating presentation of (I) by a cell. This is done by administering a polynucleotide (II) encoding a variant of (I), so that (II) expressed in a cell and cell-mediated immune response is induced. The method can be used to treat prostate cancer, breast cancer. Colorectal cancer and pancreatic cancer, as well as lymphomas and leukaemias. The method is also useful in treating chronic viral infections such as those caused by hepadnaviruses, lentiviruses and the Claviruses and pestiviruses and pestiviruses The present sequence represents the human breast cancer antigen, Her2 variant, used as a target antigen in the method of the invention.
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Best Local Similarity 22.2
Matches 107; Conservative
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conserved hypothetical protein CC0931 [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus C;Species: Caulobacter crescentus C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001 C;Accession: G87364
R.Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Bisen, J.; Heidelberg, C.B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolc n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.1, Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
A;Accession: G87364
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G87364
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nucleic Acids Res. 28, 4317-4331, 2000
A,Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans A,Reference number: A83650; MUID:20512582; PMID:11058132
A,Accession: E83679
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A;Cross-references: GB:AE005673; NID:g13422203; PIDN:AAK22915.1; C;Genetics:
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    RESULT
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R;Hayashi, T.; Makino, K.; Ohnishi, M.; Kurokawa, K.; Ishii, K.; Yokoyama, K.; Hgasawara, N.; Yasunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H. DNA Res. 8, 11-22, 2001
A;Title: Complete genome sequence of enterohemorrhagic Escherichia coli O157:H7 A;Reference number: A99829; MUID:21156231; PMID:11258796
A;Accession: G90656
                                                                                                                                                                                                                                                                                                                                                                   RESULT 4
G85507
                                                                                                                                                                                                                                                              hypothetical protein ECs0223 [imported] - Escherichia coli (strain O157:H7, C;Species: Escherichia coli C;Date: 18-Jul-2001 #sequence_revision 18-Jul-2001 #text_change 03-Aug-2001 C;Accession: G90656
                                                                                                                                                                                         A;Reference number: A85480;
A;Accession: G85507
A;Status: preliminary
A;Molecule type: DNA
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C;Superfamily: endopeptidase Clp ATP-binding chain
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                                                                                                        A;Gene: Z0254
C;Superfamily: endopeptidase Clp ATP-binding chain
                                                                                                                                     A;Residues: 1-923 <STO>
A;Cross-references: GB:AB005174; NID:g12512960; PIDN:AAG54523.1; GSPDB:GN00145; UWGP:Z02
A;Experimental source: strain O157:H7, substrain EDL933
C;Genetics:
                                                                                                                                                                                                                                      A;Title: Genome sequence of enterohemorrhagic Escherichia coli O157:H7
A;Reference number: A85480; MUID:21074935; PMID:11206551
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114 GGVLLLALL
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100.0%;
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                                                                     DB 2;
3. 3;
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transforming protein ski - axolotl (fragment)
N;Alternate names: proto-oncogene ski
C;Species: Ambystoma mexicanum (axolotl)
C;Date: 14-Jul-1995 #sequence_revision 14-Feb-1997 #text_change 20-Jun-2000
C;Accession: S52116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Mature 393, 537-544, 1998
A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the complete A;Reference number: A70500; MUID:98295987; PMID:9634230
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C; Superfamily: ski transforming protein
C; Keywords: oncogene; transforming protein
                                                                               R;Danforth, H.D.; Augustine, P.C.; Ruff, M.D.; McCandin
Poult. Sci. 68, 1643-1652, 1989
A;Title: Genetically engineered antigen confers partial
A;Reference number: A60643; MUID:90160107; PMID:2622819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Hc Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
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A;Title: Cloning and expression of the axolotl proto-oncogene ski.
A;Reference number: S52116; MUID:95092782; PMID:7999783
                                                                                                                                                                                                C;Date: 14-May-1993 #sequence_revision 14-May-1993 #text_change 18-Jun-1993
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A;Residues: 1-130 <LUD>
                                                                                                                                                                                                                                                              antigen 5401 -
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A;Experimental source: strain H37Rv
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                                                                     A;Accession: A60643
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                                            Status: not compared with conceptual translation
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nes 8; Conservative 0;
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                                                                                                                                                               Augustine, P.C.; Ruff, M.D.; McCandliss, R.;
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100.0%; Pred. No. 9.2;
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R;DelVecchio, V.G.; Kapatral, V.; Redkar, R.J.; Patra, G.; Mujer, C.; Los, T.; Ivanova, P.; Mazur, M.; Goltsman, E.; Selkov, E.; Elzer, P.H.; Hagius, S.; O'Callaghan, D.; Letessc Proc. Natl. Acad. Sci. U.S.A. 99, 443-448, 2002
A;Title: The genome sequence of the facultative intracellular pathogen Brucella melitens; A;Reference number: AD3252; PMID:11756688
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Best Local Similarity
""" Best B; Conserve
                                                                                                                                                                                                                                                                         Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata DNA Res. 8, 205-213, 2001
A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AF1903
                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Nostoc sp. PCC 7120
A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change C;Accession: AF1903
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A;Cross-references: GB:AE008917; PIDN:AAL53193.1; PID:g17984067; GSPDB:GN00190
A;Experimental source: strain 16M
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A;Experimental source: strain PCC 7120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Map position:
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A;Residues: 1-396 <KUR>
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A;Molecule type: DNA
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nes 8; Conservative
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266 GLSSSTRS 273
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A;Title: Genome sequence of A;Reference number: AB0001; A;Accession: AH0189
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                                                   hypothetical protein Rv2205c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
C;Species: Mycobacterium tuberculosis
C;Date: 17-Jul-1998 #sequence_revision 17-Jul-1998 #text_change 22-Oct-1999
C;Accession: F70785
R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.;
Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; H
Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S.
Nature 393, 537-544, 1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Residues: 1-466 <SAN>
A;Residues: 1-466 <SAN>
A;Cross-references: GB:L12453; NID:g310566; PIDN:AAA33968.1; PID:g310567
C;Comment: This enzyme catalyzes delta-aminolevulinic acid synthesis fro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Sangwan, I.; O'Brian, M.R.
Plant Physiol. 102, 829-834, 1993
Plant Physiol. 102, 829-834, 1993
A;Title: Expression of the soybean (Glycine max) glutamate A;Reference number: JQ2263; MUID:94105331; PMID:8278535
A;Accession: JQ2263
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A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Bar A;Title: Deciphering the biology of Mycobacterium tuberculosis from A;Reference number: A70500; MUID:98295987; PMID:9634230
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;Date: 30-Sep-1993 #sequence_revision
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#sequence_revision 02-Nov-2001 #text_change 09-Nov-2001
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A;Cross-references: GB:Z70283; GB:AL123456; NID:g3261561; PIDN:CAA94248.1; PID:e233581; } A;Experimental source: strain H37Rv C;Genetics: A;Gene: Rv2205c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Map position: 1
A;Introns: 118/3; 224/3; 292/1; 373/3; 457/2; 82
C;Superfamily: ubiquitin-protein ligase homology
F;756-1120/Domain: ubiquitin-protein ligase homo
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A;Description: Arabidopsis thaliana chromosome 1 BAC F1707 sequence A;Reference number: Z14334
                                                                                                                                                                                                                                     R;Rauch, U.; Forsberg, N.; Kulbe, G.; Arnold-Ammer, I.; Faessler, submitted to the EMBL Data Library, February 1995
A;Description: Amino acid sequence of mouse neurocan and brevican A;Reference number: S52781
A;Accession: S52781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:AC003671; NID:g2833627; PID:g3176690; GSPDB:GN00059; ATSP:F1707
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A; Residues: 1-1126 < VYS>
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C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 04-Mar-2000
C;Accession: T01491
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                                                               A;Molecule type: mRNA
A;Residues: 1-1268 <RAU>
A;Residues: 1-1268 <RAU>
A;Cross-references: EMBL:X84727; NID:g758629; PIDN:CAA59216.1; PID:g758630
A;Cross-references: EMBL:X84727; NID:g758629; Complement factor H repeat
C;Superfamily: aggrecan; C-type lectin homology; complement factor H repeat
F;176-253/Domain: link protein repeat homology <LNK1>
F;274-355/Domain: link protein repeat homology <LNK2>
                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Mus musculus (house mouse)
C;Date: 19-May-1995 #sequence_revision
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C;Species: Arabidopsis thaliana (mouse-ear cress)
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                                               F;964-995/Domain: EGF homology <EGF>
;1040-1160/Domain: C-type lectin homology <LCH>;1167-1223/Domain: complement factor H repeat h
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Similarity 100.0%;
8; Conservative (
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Pred. No.
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P.; Sun, H.;
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Mismatches
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Davis, R.W.; Ecker,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 480
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Ecker, J.R.; F
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homology

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genome polyprotein - West Nile virus
N;Contains: core protein V2; membrane-associated
sor; nonstructural protein NV5
C;Species: West Nile virus
C;Date: 30-Sep-1987 #sequence_revision 30-Sep-198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 vascular endothelial growth factor receptor 1 precursor - Japanese quail NALI ernate names: quail endothelial kinase 1 (Quek 1); vascular endothelia C;Species: Coturnix coturnix japonica (Japanese quail) C;Date: 07-May-1995 #sequence revision 01-Sep-1995 #text change 08-Dec-2000 C;Accession: JC4953; A55598; T51162; S51656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Superfamily: unassigned Ser/Thr or Tyr-specific protein kinases; protein kinase ! C;Keywords: ATP; embryo; growth factor receptor; transmembrane protein F;1-19/Domain: signal sequence #tratus predicted <SIG> F;20-1348/Product: vascular endothelial growth factor receptor 1 #status predicted
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A;Note: the species is not identified by the authors; the most probable species is shown A;Note: the species is not identified by the authors and binds vascular endothelial-specific receptor and binds vascular endothelial-specific receptor.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: DNA
A; Residues: 1023-1079 < MAR>
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A;Title: Molecular cloning of a family of protein kinase
A;Beference number: I50595; MUID:93096482; PMID:1281306
A;Accession: I51162
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R; Eichmann, A.;
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Oncogene 7, 2479-2487, 1992
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(Cross-references: EMBL:X83288; NID:g603523; PIDN:CAA58268.1; Note: submitted to the EMBL Data Library, December 1994; Note: submitted to the EMBL Data Library, December 1994; Eichmann, A.; Marcelle, C.; Breant, C.; Le Douarin, N.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local &
Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Status: preliminary
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Molecule type: mRNA
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                                                                                                                                                                                                                                                                                                                                                                            Query Match
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                                                                                                                                                                                                                                                                                                                              Conservative
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  #sequence_revision 30-Sep-1987 #text_change 19-Jan-200:
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100.0%; Pr
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100.0%; Pred. No. 40;
tive 0; Mismatches
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s; Pred. No. 42;
0; Mismatches
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NCBIP: 137163)
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                            Query Match
Best Local
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genome polyprotein - Kunjin virus (strain MRM61C)
N;Contains: capsid protein C; envelope protein E; (
in NS4a; nonstructural protein NS4b; nonstructural
C;Species: Kunjin virus
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F;105-233/Product: membrane-associated glycoprotein NV2 precursor #status predicted F;105-123/Domain: nonterminal signal sequence #status predicted <2SS>
F;124-233/Product: membrane-associated glycoprotein NV2 #status predicted <2NV>
F;124-233/Product: membrane-associated nonglycosylated protein V1 #status predicted F;215-233/Product: membrane-associated glycoprotein V3 precursor #status predicted F;275-987/Product: membrane-associated glycoprotein V3 precursor #status predicted F;275-997/Product: membrane-associated glycoprotein V3 #status predicted c3SS>
F;291-787/Product: membrane-associated glycoprotein V3 #status predicted <3NV>
F;198-2109/Product: nonstructural protein NV4 #status predicted <NV4>
F;198-2109/Product: nonstructural protein NV4 #status predicted <NV4>
F;198-21787/Region: nucleotide-binding motif B
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A;Title: Nucleotide and complete amino acid sequences of Kunjin vi A;Reference number: A28697, MUID:88089524; PMID:2826659
A;Accession: A28697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Date: 30-Sep-1989 #sequence_revision 30-Sep-1989 #text_change 19-Jan-200:
C;Accession: A28697
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A;Note: parts of this sequence, including the amino ends of the mature proteins, we
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                                                                                                                                                                                                                          1144-1374/Product: nonstructural protein NS2a #status predicted <N2A>;1175-1505/Product: nonstructural protein NS2b #status predicted <N2B>;1375-1505/Product: nonstructural protein NS3 #status predicted <N2B>;1506-2124/Product: nonstructural protein NS3 #status predicted <NS3>;1699-1706/Region: nucleotide-binding motif A (P-loop);1786-1791/Region: nucleotide-binding motif B
                                                                                                                                                                                                                                                                                                                                                                           ;216-290/Product: membrane protein M #status predicted <MPM>;291-791/Product: envelope protein E #status predicted <EPE>;792-1143/Product: nonstructural protein NS1 #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Molecule type: genomic RNA
"Residues: 1-343 <COI»
"Cross-references: GB:D00246; NID:g221966; PIDN:BAA00176.1; PID:g221967
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    irology 149, 10-26, 1986
.Title: Primary structure of the West Nile flavivirus genome
.Reference number: A25256; MUID:86124703; PMID:3753811
.Recession: A25256
                                                                                                      ;2274-2528/Product:
;2529-3433/Product:
                                                                                                                                                                                             ;1786-1791/Region: nucleotide-binding;1790-1793/Region: DEAH motif
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;138,917,962,994,1289,1659,1966,2336,2459,2489,2573,2739,2759,2864,2902/Binding
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Best Local
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8; Conserv
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                                                                                                   nonstructural protein NS4a #status predicted nonstructural protein NS4b #status predicted nonstructural protein NS5 #status predicted .
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            Score 8;
Pred. No.
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. 95;
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95;
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                                         Length 3433;
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NS5
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Similarity 8; Conserv

100.0%;

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Mismatches

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Indels

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F:218-292/Product: membrane protein #status predicted <SIG>
F:218-292/Product: membrane protein #status predicted <SIG>
F:278-292/Domain: transmembrane #status predicted <TN1>
F:293-793/Product: envelope protein #status predicted <TN1>
F:794-1205/Product: nonstructural protein NS1 #status predicted <NS1>
F:1206-1372/Product: nonstructural protein NS1 #status predicted <NS1>
F:1373-1503/Product: nonstructural protein NS2a #status predicted <NS2>
F:1373-122/Product: nonstructural protein NS2b #status predicted <NS2>
F:1504-2122/Product: nonstructural protein NS2b #status predicted <NS3>
F:1697-1704/Region: nucleotide-binding motif A (P-loop)
F:1788-1791/Region: DEAH motif
F:1788-1791/Region: DEAH motif
F:2123-2414/Product: nonstructural
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ", ", ", ", (strain Australia) ", ", ", ", (strain Australia) a; nonstructural protein NS4b; nonstructural protein NS5 C;Species: Murray Valley encephalitis virus C;Date: 30-Jun-1988 #sequence_revision 17-Feb-1994 #text_change 19-Jan-2001 C;Accession: A24635; A60288 R:Dalcarro 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: GB:X03467; NID:g59329; PIDN:CAA27184.1; PID:g755731 R;Lee, E.; Fernon, C.; Simpson, R.; Weir, R.C.; Rice, C.M.; Dalgarno, L. Virus Genes 4, 197-213, 1990 A;Title: Sequence of the 3' half of the Murray Valley encephalitis virus A;Reference number: A60288; MUID:91102934; PMID:1702914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 밁
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A;Residues: 1504-1778, 'V',1708-3434 <LEE>
G;Residues: 1504-1778, 'V',1708-3434 <LEE>
C;Superfamily: yellow fever virus genome polyprotein
C;Keywords: ATP; capsid protein; envelope protein; glycoprotein; nonstructural protein;
C;Keywords: ATP; capsid protein #status predicted <CAP>
F;1-125/Product: capsid protein #status predicted <CAP>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Reference number: A24635; MUID:86200215; PMID:3009829
A;Accession: A24635
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N;Contains: capsid protein; envelope protein; membrane protein; nonstruc
                                                                                                                                                                                                                N;Contains: alternative-complement-pathway C3/C5 convertase (EC 3.4.21.47) (C;Species: Bos primigenius taurus (cattle) C;Date: 31-Dec-1993 #sequence_revision 03-Feb-1994 #text_change 07-Oct-1994 C;Accession: A60996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R;Dalgarno, L.; Trent, D.W.; Strauss, J.H.; Rice, J. Mol. Biol. 187, 309-323, 1986
A; Molecule type: protein A; Residues: 1-23 < ANW > A; Note: this protein was
                                                                           FEMS Microbiol. Lett. 71, A;Title: Association of a A;Reference number: A60996 A;Accession: A60996
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A60996
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Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;2123-2414/Product: nonstructural protein NS4a #status predicted <N4A>;2123-2414-Product: nonstructural protein NS4b #status predicted <N4B>;2415-2529/Product: nonstructural protein NS5 #status predicted <NS5>;2530-3434/Product: nonstructural protein NS5 #status predicted <NS5>;73,140,446/Binding site: carbohydrate (Asn) (covalent) #status predict
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  was purified
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38 kDa bovine serum
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     Bordetella pertussis
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        outer membranes after exposu
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           Query Match
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C;Comment: Complement C3 contains two chains, formed by removal of four residues and lin: alternative complement pathways, releases the C3a anaphylatoxin from the amino end of ti rnative-complement-pathway C3/C5 convertase.

C;Comment: C3a anaphylatoxin is a vasoactive peptide and a mediator of inflammation.

C;Comment: C3b, with its highly reactive thiol group, binds to the surface of foreign pa e classical-complement-pathway C3/C5 convertase. The activity of C3b is regulated by proc;Comment: The major site of synthesis of this plasma protein is the liver.

C;Superfamily: alpha-2-macroglobulin

C;Keywords: acute phase; complement alternate pathway; complement pathway; glycoprotein;
                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
G64863
                                                                                                                                                                                                                                                                                                   R;Blattner, F.R.; Plum
.A.; Rose, D.J.; Mau,
                                                                                                                                                                                                                                                                                                                                                C;Species: Escherichia coli
C;Date: 12-Sep-1997 #sequence_revision 17-Sep-1997 #text_change 01-Mar-2002
C;Accession: G64863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Superfamily: Neurospora
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Experimental source:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: DNA
A; Residues: 1-122 < SCH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Reference number: Z25286
A; Accession: T51036
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 hypothetical protein B15120.60 [imported] - Neurospora crassa C;Species: Neurospora crassa C;Date: 21-Jul-2000 #sequence_revision 21-Jul-2000 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     T51036
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C;Superfamily: Es
F;1-22/Domain: si
F;23-133/Product:
                                                                                                                                                   A;Status: nucleic acid so
A;Molecule type: DNA
A;Residues: 1-133 <BLAT>
                                                                                                                                                                                                                A;Title: The complete genome sequence of Escherichia coli K-12. A;Reference number: A64720; MUID:97426617; PMID:9278503 A;Accession: G64863
                                                                                                                                                                                                                                                                                                                                              C; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                        ycgK protein precursor - Escherichia coli (strain K-12)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: NCSP: B15I20.60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Status: preliminary
                                                                                                         A;Cross-references: GB:AE000216; GB:U00096; NID:g1787417; PIDN:AAC74262.1; PID:g1787426; A;Experimental source: strain K-12, substrain MG1655
                                                                                                                                                                                                                                                                               Science 277, 1453-1462, 1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;cross-references: EMBL:AL389900; GSPDB:GN00116; NCSP:B15120.60;Experimental source: BAC clone B15120; strain OR74A
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Escherichia coli ycgK protein
signal sequence #status predict: ycgK protein #status predi
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                                                                                                                                                                                              acid sequence not shown; translation not
                                                                                                                                                                                                                                                                                                                            Plunkett III,
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                                                                                                                                                                                                                                                                                                       G.; Bloch, C.A.; Perna, N.T.; Y.
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July 2000
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        <MAT>
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Score

7;

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Length

133;

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N;resna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasriller, L.; Grotbeck, E.J.; Davis, N.W.; Lim, A.; Dimalanta, Nature 409, 529-533, 2001
hypothetical 15.3K protein - Lymantria dispar nuclear polyhedrosis N;Alternate names: hypothetical protein 5 C;Species: Lymantria dispar nuclear polyhedrosis virus, LdMNPV
                                                                RESULT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein ycgK [imported] - Escherichia coli (strain O157:H7, substrain C;Species: Escherichia coli (c;Species: Escherichia coli C;Date: 16-Feb-2001 #sequence_revision 16-Feb-2001 #text_change 14-Sep-2001 C;Accession: A85696 R;Perna, N.T.; Plunkett III, G.; Burland, V.; Mau, B.; Glasner, J.D.; Rose, D.J.; N
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C;Superfamily: Escherichia coli ycgK protein
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A;Residues: 1-133 <HAY>
A;Cross-references: GB:BA000007; PIDN:BAB35095.1; PID:g13361136;
A:Experimental source: strain O157:H7, substrain RIMD 0509952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R;Hayashi, T.; Makino, K.; Ohnishi, M.; Kurokawa, K.; Ishii, K.; Yokoyama, K.; Hgasawara, N.; Yasunaga, T.; Kuhara, S.; Shiba, T.; Hattori, M.; Shinagawa, H. DNA Res. 8, 11-22, 2001
A;Tille: Complete genome sequence of enterohemorrhagic Escherichia coli O157:H7
A;Reference number: A99829; MUID:21156231; PMID:11258796
A;Accession: H90837
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H90837
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A;Residues: 1-133 <STO>
A;Cross-references: GB:AE005174; NID:g12514875; PIDN:AAG56029.1;
A·Exnerimental source: strain O157:H7, substrain EDL933
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C;Species: Escherichia coli
C;Bate: 1B-Jul-2001 #sequence_revision 18-Jul-2001 #text_change 03-Aug-2001
C;Accession: H90837
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Pred. No.
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C70513
                                                                                                                                                                                                                  R;Cole, S.T.; Brosch, R.; Parkhill, J.; Garnier, T.; Churcher, C.; Harris, D.; Gordon, ; Connor, R.; Davies, R.; Devlin, K.; Feltwell, T.; Gentles, S.; Hamlin, N.; Holroyd, S.; Rajandream, M.A.; Rogers, J.; Rutter, S.; Seeger, K.; Skelton, S.; Squares, S. Nature 393, 537-544, 1998
                                       A; Experimental source: strain
                                                          A;Cross-references: GB:Z97559; GB:AL123456; NID:g3261820; PIDN:CAB10716.1; PID:e328401;
                                                                                                 A; Molecule type: DNA
                                                                                                                                         A;Authors: Sqares, R.; Sulston, J.E.; Taylor, K.; Whitehead, S.; Barrell, B.G. A;Title: Deciphering the biology of Mycobacterium tuberculosis from the comple A;Reference number: A70500; MUID:98295987; PMID:9634230
A;Accession: C70513
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                                                                                 A;Residues: 1-160 <COL>
                                                                                                                  A;Status: preliminary; nucleic acid sequence not shown; translation not
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A; Residues: 1-151 < KUR>
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17-Jul-1998 #text\_change 28-Jul-2000

shown

complete

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hypothetical protein alr1330 [imported] - Nostoc sp. (strain PCC 7120) c;Species: Nostoc sp. PCC 7120 a synonym of Anabaena sp. strain C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Dec C;Accession: AG1972 r; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Wata Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yas DNA Res. 8, 205-213, 2001 a,;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing A;Reference number: AB1807; MUID:21595285; PMID:11759840
                                                                                                                                                                                                                                                                                        A;Cross-references: GB:BA000019; PIDN:BAB73287.1; PID:g17130677; GSPDB:GN00179
A;Experimental source: strain PCC 7120
C;Genetics:
A;Gene: alr1330
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A;Residues: 1-141 <BJO>
A;Residues: 1-141 <BJO>
A;Cross-references: DDBJ:D10836
A;Note: the authors translated the codon TAT for residue 19 as Thr,
C;Superfamily: Lymantria dispar nuclear polyhedrosis virus hypothet.
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J. Gen: Virol. 73, 1499-1504, 1992
A;Title: Nucleotide sequence of the polyhedron envelope
A;Reference number: PQ0339; MUID:92300345; PMID:1607868
A;Accession: JQ1561
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C;Accession: JQ1561
hypothetical protein Rv2120c - Mycobacterium tuberculosis (strain H37RV)
C;Species: Mycobacterium tuberculosis
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hypothetical
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, M.; Yasuda, N
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09-Dec-2002
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R;Heidelberg, J.F.; Eisen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R.J. chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qiń, H.; Dragoi, I.; Sellers, l, R.R.; Mekalanos, J.J.; Venter, J.C.; Fraser, C.M.
Nature 406, 477-483, 2000
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                                                                                                                                                                                                                                                                                                              R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.B.; Eisen, J.; Heidelberg, J. B.; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolon n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M. Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Reference number: A87249; MUID:21173698; PMID:11259647
A;Accession: H87591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Residues: 1-161 <HEI>
A;Cross-references: GB:AE004131; GB:AE003852; NID:g9654856; PIDN:AAF93612.1;
A;Experimental source: serogroup O1; strain N16961; biotype El Tor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        conserved hypothetical protein VC0439 [imported] - Vibrio cholerae (strain N16961 C;Species: Vibrio cholerae
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein CC2768 [imported] - Caulobacter crescentus C;Species: Caulobacter crescentus C;Species: Caulobacter crescentus C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 20-Apr-2001 C;Accession: H87591
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H87591
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C; Superfamily: pr
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                                                                                                                                                                                                     A; Gene: CC2768
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A;Residues: 1-169 <STO>
A;Cross-references: GB:
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Accession: F82322
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type: DNA
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RESULT

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A, Accession: Tle sequence of A, Ederence number: S46729
A, Accession: T16472
A, Status: prelimination
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A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anai A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AG2369
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Nature 406, 959-964, 2000
A;Title: Complete genome sequence of Pseudomonas aeruginosa PAO1, an opportunist A;Reference number: A82950; MUID:20437337; PMID:10984043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        hypothetical protein PA1867 [imported] - Pseudomonas aeruginosa C;Species: Pseudomonas aeruginosa C;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change C;Accession: B83411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              cytochrome b6/f-complex iron-sulfur protein [imported] - Nostoc C;Species: Nostoc sp. PCC 7120
A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change
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C;Superfamily: ubiquinol-cytochrome-c reductase iron-sulfur protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Cross-references: GB:BA000019; PIDN:BAB76210.1; PID:g17133647; GSPDB:GN00179 A;Experimental source: strain PCC 7120
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A; Residues: 1-175 <STO>
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                                                                                                                                         hypothetical protein F56C9.8 - Caenorhabditis elegans C;Species: 'Caenorhabditis elegans C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #t.C;Date: 20-Sep-1999 #t.C;Accession: T16472
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                                                                          submitted to the EMBL Data Library, May 19 are rintion: The sequence of C. elegans
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Similarity 100.0%;
7; Conservative
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A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-188 <TET>
A;Cross-references: GB:AE002379; GB:AE002098; NID:g7225435; PIDN:AAF40671.1; PID:g722543
A:Experimental source: serogroup B, strain MC58
                                                                                                                                                                                                                                                                                                                                                                       R;Tettelin, H.; Saunders, N.J.; Heidelberg, J.; Jeffries, A.C.; Nelson, K.E.; Hickey, E.K.; Haft, D.H.; Salzberg, S.L.; White, O.; Fleischmann, R.D.; Doughe ri, H.; Qin, H.; Vamathevan, J.; Gill, J.; Scarlato, V.; Masignani, V.; Pizza, Science 287, 1809-1815, 2000
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                                                                                                                                                                                                                                                                                                           A;Authors: Grandi, G.; Sun, L.; Smith, H.O.; Fraser, C.M.; Moxon, E.R.; A;Title: Complete genome sequence of Neisseria meningitidis serogroup B A;Reference number: A81000; MUID:20175755; PMID:10710307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 conserved hypothetical protein NMB0215 [imported] - Neisseria meningitidis (strain C;Species: Neisseria meningitidis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Wolecule type: DNA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         Accession:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 19-Jan-2001
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Best Local
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    164 GRCAEFA 170
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                                        Similarity 7; Conserv
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                                                                                                                      Escherichia coli conserved hypothetical protein
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be: strain Bristol N2
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                                                            100.0%;
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100.0%; Pred. No.
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                                        Mismatches
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5. 76;
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erty, B.A.
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                                  C;Accession: C82979
R;Stover, C.K.; Pham, X.Q.; Erwin, A.L.; Mizoguchi, S.D.; Warrener, adman, S.; Yuan, Y.; Brody, L.L.; Coulter, S.N.; Folger, K.R.; Kas,
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                                                                                            Species: Pseudomonas aeruginosa;Date: 15-Sep-2000 #text_change 31-Dec-2000;Date: 15-Sep-2000 #sequence_revision 15-Sep-2000 #text_change 31-Dec-2000
7, S.; Olson, M.V.
406, 959-964, 2000
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Genomics 10, 583-587, 1991
A;Title: The mouse biliary glycoprotein gene (Bgp): partial
A;Reference number: A40305; MUID:91365364; PMID:1653760
A;Accession: A40305
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Best Local Similarity
7; Conserv
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                                                                                                                                                                                                                                                                                        C;Keywords: glycoprotein
F;2-51/Domain: immunoglobulin homology <IMMl>
                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GB:M61907; GB:M73534; NID:g192197; PIDN:AAA37298.1; PID:g192198
C;Superfamily: carcinoembryonic antigen; carcinoembryonic antigen precursor amino-to-
                                                                                                                                                                                                                                                                                                                                                                            A; Molecule type: mRNA
A; Residues: 1-206 < ROB>
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C;Date: 03-Apr-1992 #sequence_revision 03-Apr-1992 #text_change
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A;Cross-references: GB:AE004676; GB:AE004091; NID:g9948532; PIDN:AAG05872.1; GSPDB:GN001:
A;Experimental source: strain PAO1
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hypothetical protein PA5341 [imported] - Pseudomonas aeruginosa (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R; Robbins, J.; Robbins, P.F.; Kozak, C.A.; Callahan,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      biliary glycoprotein - mouse (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Title: Complete genome sequence of Pseudomonas aeruginosa
A;Reference number: A82950; MUID:20437337; PMID:10984043
A;Accession: D83334
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C;Species: Pseudomonas aeruginosa
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                                                                                                                                                                                                                                                                     immunoglobulin homology < IMM2:
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r, S.N.; Folger, k
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K.; Lim,
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Complete genome sequence of Pseudomonas aeruginosa PA01, an

P.; Hickey, A.; Larbig,

M.J.; Br K.; Lim,

opportunistic patho

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R; Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y. M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; Vanaken, S.E.; Umayam, L.; Tallon, ) euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, Nature 402, 761-768, 1999

A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A;Reference number: A84420; MUID:20083487; PMID:10617197

A;Accession: F84563
                                                                                                                                                                                                                                                                                      pyroglutamyl-peptidase I (EC 3.4.19.3) - Bacillus amyloliquefaciens
N;Alternate names: 5-oxoprolyl-peptidase; pyroglutamyl aminopeptidase
C;Species: Bacillus amyloliquefaciens
C;Date: 10-un-1993 #sequence_revision 10-un-1993 #text_change 18-Aug-2000
C;Accession: JX0244
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A;Experimental source: strain PAO1
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A;Accession: C82979
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                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-215 < YOS>
                                                                                                                                                                                       A; Accession: JX0244
                                                                                                                                                                                                      A;Title: Pyroglutamyl peptidase gene from Bacillus amyloliquefaciens: Cloning, sequencinA;Reference number: JX0244; MUID:93203177; PMID:8095933
                                                                                                                                                                                                                                                 R;Yoshimoto, T.; Shimoda,
J. Biochem. 113, 67-73, 1
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A;Residues: '1-207 <STO>
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Best Local
                                                                               Cross-references: DDBJ:D11035; NID:g216315; PIDN:BAA01791.1;
Superfamily: Bacillus subtilis pyroglutamyl-peptidase I pcp
Keywords: hydrolase; omega peptidase
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1993
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100.0%; Pred. No. 85;
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AG3100
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R;Wood, D.W.; Setubal, J.C.; Kaul, R.; Monks, D.; Chen, L.; Woo erage; G.; Gillet, W.; Grant, C.; Guenthner, D.; Kutyavin, T.; ; Karp, P.; Romero, P.; Zhang, S. Science 294, 2317-2323, 2001

Wood, G.E.; Chen, T.; Levy, R.; Li,

M.; McClell

C; Accession: AG3100

A;Authors: Yoo, H.; Tao, Y.; Biddle, P.; Jung, M.; Krespan, W.; ster, E.W.

A; Title: The Genome of the Natural Genetic A; Reference number: AB2577; MUID:21608550; A; Accession: AG3100

Engineer Agrobacterium tumefaciens C58 PMID:11743193

replicative DNA helicase [imported] - Agrobacterium tumefaciens (strain C58, C;Species: Agrobacterium tumefaciens C;Date: 11-Jan-2002 #sequence\_revision 11-Jan-2002 #text\_change 18-Nov-2002

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Nature 390, 249-256, 1997

A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Gallert A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Holsappel, S.; Hosono, S.; Hullo, M.F. iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois, A;Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Maueel Y.; M.; Ogiwara, A.; Oddega, B.; Park, S.M.; Parro, V.; Pohl, T.M.; Portettelle, Rieger, M.; Rivolta, C.; Rocha, E.; Roche, B.; Rose, M.; Sadaie, Y.; Sato, T.; Scanlon, A;Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Seror akeuchi, M.; Tamakoshi, A.; Tanaka, T.; Terpstra, P.; Tognoni, A.; Tosato, V.; Uchyama, T.; Winters, P.; Wipat, A.; Yamamoto, H.; Yamane, K.; Yasumoto, K.; Yata, K.; Yoshida, K.; Authors: Yoshikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A.
A;Title: The complete genome sequence of the Gram-positive bacterium Bacillus subtilis. A; Reference number: A69580; MUID:98044033; PMID:394377
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A;Experimental source: strain 168
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A; Residues: 1-215 < AWA>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
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A;Residues: 1-217 <KUR>
A;Crose-references: GB:AR008689; PIDN:AAL45221.1; PID:g17742902; GSPDB:GN00187
A;Experimental source: strain C58 (Dupont)
C;Genetics:
A;Gene: Atu4427
A;Map position: linear chromosome
Query Match
Best Local Similarity 100.0%; Pred. No. 88;
Matches 7; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
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Cole S. T., Brosch R., Parkhill J., Garnier T., Churcher C., Harris Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Gordon S.V., Basham D., Brown D., Chillingworth T., Connor R., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Holroyd Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";
Nature 393:537-544(1998).
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Hypothetical protein Rv0966c.
Rv0966C OR MT0994 OR MTCY10D7.08
                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on it use by non-profit institutions as long as its content is in no was modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce or send an email to license@isb-sib.ch).
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Fleischmann R.D., Alland D., Bisen J.A., Carpenter L., White O.,
Peterson J., DeBoy R., Dodson R., Gwinn M.L., Haft D., Hickey E.,
Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg
Delcher A., Utterback T., Weidman J., Khouri H., Gill J., Mikula
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                                                                                                                                                                                                                                                              aboratory strains.";
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Z79700; CAB01985.1; ALT_INIT.
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01-OCT-1996
15-DEC-1998
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TIGR; MT0994;
TubercuList; Rv0966c; -.mplete p
Hypothetical protein; Complete p
CONFLICT 175 175, V -
SEQUENCE 200 AA; 22210 MW;
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Gole S.T., Brosch R., Parkhill J., Garnier T., Churcher C., Harris Gordon S.V., Eiglmeier K., Gas S., Barry C.E. III, Tekaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R., Devlin K., Feltwell T., Gentles S., Hamlin N., Holroyd Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Oliver S., Osborne J., Quail M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Squares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; "Deciphering the biology of Mycobacterium tuberculosis from the complete genome sequence.";
Nature 393:537-544(1998)."
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15-DEC-1998 (Rel. 37, Last sequence up
28-FEB-2003 (Rel. 41, Last annotation
Hypothetical protein Rv2205c.
RV2205C OR MT2261 OR MTCY190.16C.
                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

STRAIN=CDC 1551 / Oshkosh;

Fleischmann R.D., Alland D., Eisen J.A., Carpenter L., White O.,

Fleischmann R.D., Alland D., Gwinn M.L., Haft D., Hickey E.,

Peterson J., DeBoy R., Dodson R., Gwinn M.L., Haft D., Salzberg

Kolonay J.F., Nelson W.C., Umayam L.A., Ermolaeva M.D., Salzberg

Belcher M., Utterback T., Weidman J., Khouri H., Gill J., Mikula
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mycobacterium tuberculosis.
Bacteria; Actinobacteridae; Actinomycetales;
Corynebacterineae; Mycobacteriaceae; Mycobacterium.
                                                                                                                                                EMBL; Z70283; CAA94248.1; ALT_INIT.
EMBL; AE007072; AAK46547.1; ALT_INIT.
TIGR; MT2261; -.
Tuberculist; Rv2205c; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            laboratory strains.";
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
-!- SIMILARITY: BELONGS TO THE GLYCERATE KINASE FAMILY.
InterPro; IPR004381; Cons_hypoth45.
Pfam; PF02595; Gly kinase; 1.
TIGRP0045; TIGR00045; 1.
Hypothetical protein; Transferase; Kinase; Complete pr
SEQUENCE 358 AA; 35592 MW; AC7EDC5BF8E41544 CRC64;
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STRAIN=H37Rv;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Whole genome comparison
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'2210 MW; 752F8CFBE9BB3C02 CRC64;
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P45621;
01-NOV-1995
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                                                                                                                                                                EMBL; L12453; AAA33968.1; -.
EMBL; U20260; AAC48996.1; -.
PIR; JQ2263; JQ2263.
HSSP; P24630; 2GSA.
                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collab between the Swiss Institute of Bioinformatics and the EMBL outst the European Bioinformatice Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for conmodified and this statement is not removed. Usage by and for conmodified and this statement is not removed.
TIGREAMS; TIGR00713; hemL; 1.
PROSITE; PS00600; AA TRANSFER_CLASS_3; 1.
Porphyrin biosynthesIs; Chlorophyll biosynthesis;
                                                                                                                                                                                                                                                                                                                        modified and this statement is not removed. Usage by and for entities requires a license agreement (See http://www.isb-sib
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "geal is a universal tetrapyrrole synthesis gene in regulated by a GAGA element.";
J. Biol. Chem. 270:7387-7393(1995).
-I- CATALYTIC ACTIVITY: (S)-4-amino-5-oxopentanoate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=cv. Essex;
MEDLINE=95221396; PubMed=7706283;
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Sangwan I., O'Brian M.R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidaeurosids I; Fabales; Fabaceae; Papilionoideae; Phaseoleae; Glycine
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01-NOV-1995 (Rel. 32, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Glutamate-1-semialdehyde 2,1-aminomucase, chl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Frustaci J.M., Sangwan I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM
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                                                                                                           InterPro; IPR005814; Aminotrane_3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              aminolevulinate.

- COPACTOR: Pyridoxal phosphate.

- PATHWAY: Porphyrin blosynthesis by the C5 patilivolved in chlorophyll blosynthesis.

- SUBUNIT: Homodiner (By sinilarity).

- SUBCELLULAR LOCATION: Chloroplast.

- TISSUE SPECIFICITY: STRONGLY EXPRESSED IN LEA PLANTLETS INDEPENDENTLY OF LIGHT TREATMENT AND TRANTED BLANTER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Expression of the soybean (Glycine max) aminotransferase gene in symbiotic root r Plant Physiol. 102:829-834(1993).
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                                                                                     ofam; PF00202; aminotran
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15-SEP-2003 (Rel. 42, Last ann
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                                                                                                                                                                           EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                   Faessler R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=BALB/c; TISSUE=Brain;
MEDLINE=96039250; PubMed=7490074;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Neurocan core
CSPG3 OR NCAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P55066;
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                    InterPro;
                             InterPro;
                                                   InterPro;
                                                                          interPro;
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                                                                                                                     InterPro;
                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                       "Structure and chromosomal localization of the mouse neurocan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PGCN_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 4
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                                                                                                                                                                           X84727;
                                                                                                                                                     P00740;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23
                                                                                                                                                                                               s requires a license agreement (S an email to license@isb-sib.ch).
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                  | IPRO01881;
| IPR006209;
| IPR0077110;
| IPR003599;
| IPR003006;
| IPR001304;
| IPR000538;
| IPR000436;
                                                                                                                                                                                                                              non-profit institutions as long as its content
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                                                                                                            IPR000742;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Grimpe B.,
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Contains 2 EGF-like domains.
Contains 2 link domains.
Contains 1 C-type lectin family domain.
Contains 1 Sushi (SCR) domain.
BELONGS TO THE AGGRECAN/VERSICAN PROTEOGLYCAN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                             by binding to neural Chondroitin sulfate p
                                                                                                                                         Capg3
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306 P
49646 MW;
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                                      Ig_MHC.
Lectin_C.
                                                                        EGF_Ca.
EGF_like.
Ig-like.
                  Sushi_SCR_CCP
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                                                                                                         Asx_hydroxyl.
EGF_2.
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                                Link.
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Last annotation update)
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CHLOROPLAST (POTENTIAL).
GLUTAMATE-1-SEMIALDEHYDE 2,1-AMINOMUTASE.
PYRIDOXAL PHOSPHATE (BY SIMILARITY).
                                                                                                                                                                                                                                                   of Bioinformatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Craniata; Vertebrata; I
Sciurognathi; Muridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Arnold-Ammer I.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5523012AE808DE72 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                     It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                           proteoglycan;
                                                                                                                                                                                                                                                                                                                                                                                               adhesion and neurite growth
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                                                                                                                                                                                                                                                                                                                                                                                      cell adhesion molecules
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                                                                                                                                                                                                                                      There are no
                                                                                                                                                                                                        http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                  Usage
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RESULT 5
VGR2_COTJA
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Best Local S
Matches 8
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PRINTS; PRO0356; ANTIFREEZEII.
PRODOM; PD000918; Link; 2.
SMART; SM00032; CCP; 1.
SMART; SM00034; CLECT; 1.
SMART; SM001034; CLECT; 1.
SMART; SM00109; IGF_CA; 1.
SMART; SM00109; IGF_CA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROSITE; PS00010; ASX_HYDROXYL;
PROSITE; PS00615; C_TYPE_LECTIN
PROSITE; PS50041; C_TYPE_LECTIN
PROSITE; PS00022; EGF_1; 3.
PROSITE; PS01186; EGF_2; 1.
PROSITE; PS01187; EGF_CA; 1.
PROSITE; PS01187; EGF_CA; 1.
PROSITE; PS0135; IG_LIKE; 1.
PROSITE; PS01241; LINK; 2.
                                                                                    P52583;
01-OCT-1996
01-OCT-1996
15-SEP-2003
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Pfam;
                                            01-OCT-1996 (Rel. 34, Created)
11-OCT-1996 (Rel. 34, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Vascular endothelial growth factor receptor 2
(VEGFR-2) (Endothelial kinase receptor EKI) (KDR OR FLK-1 OR EKI.
                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                      CARBOHYD
CARBOHYD
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                       Coturnix coturnix japonica (Japanese quail).
Eukaryota; Metazoa; Chordata; Craniata; Vert
             Archosauria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIGNAL
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B; Conserv
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PS00615; C_TYPE_LECTIN_1;
PS50041; C_TYPE_LECTIN_2;
PS00022; EGF_1; 3.
                                                                                                                                                                                                                              GEPPDLTW 225
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             Aves;
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8 978
5 1175
3 AA; 137200
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                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Calcium;
                                                                                                                                                                                                                                                                                                                                                      420
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           Neognathae;
              Chordata; Craniata; Vertebrata; Euteleostomi;
Weognathae; Galliformes; Phasianidae; Phasiani
                                                                                                                                                                                                                                                                 1.5%;
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EGF-LIKE 1.
EGF-LIKE 2, CA
C-TYPE LECTIN.
                                                                                                                                                                                                                                                                 Score 8; 1
Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NEUROCAN CORE PROTEINIG-LIKE V-TYPE.
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                                                                                                                                                                                                                                                                                                                                                                              Y SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Proteoglycan; Immunoglobulin domain;
                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                       3014E8E202A2FAEC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lectin; Sushi; Signal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1348
                                                                                                                                                                                                                                                                                                                  GLCNAC...
(GLCNAC...
(GLCNAC...
(GLCNAC...
                                                                                                                                                                                                                                                            DB
19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CALCIUM-BINDING
                                                            2 precursor (EC (Quek 1) (Quek1)
                                                                                                                                                                                                                                                                             Length 1268;
                                                                                                                                                                                                                                                                                                       CRC64;
                                                                                                                                                                                                                                                                                                                  (POTENTIAL).
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              Phasianinae;
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InterPro; 11, 19; 6.
Pfam; PF00047; 19; 6.
Pfam; PF00069; pkinase; 1.
ProDom; PD000001; Prot kir
ProDom; PT000001; Prot Kir
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-i SUBCELLULAR LOCATION: Type I membrane protein.

-i SUBCELLULAR LOCATION: Type I membrane protein.

-i TISSUE SPECIFICITY: IN ALL ENDOTHELIAL TISSUES DURING ONSET OF VASCULARIZATION: IN LATER DEVELOPMENT, PRESENT IN LUNG, HEART, INTESTINE AND SKIN.

-i DEVELOPMENTAL STAGE: EXPRESSED IN WHOLE MESODERM AT ONSET OF GASTRULATION. FROM DAY 2, CONFINED TO ENDOTHELIAL TISSUES AND EXPRESSION CONTINUES TO BE WIDESPREAD THROUGHOUT VASCULARIZATION UNTIL 89 WHERE IT BECOMES RESTRICTED TO SPECIFIC REGIONS SUCH AS THE SPINAL CHORD AND HEART VALVES.

THE SPINAL CHORD AND HEART VALVES.

-i INDUCTION: IN VITRO, VEGR IS INDUCED BY BASIC FIBROBLAST GROWTH FACTOR (FGF), UNIQUELY IN THE FIRST 24 H OF CELL CULTURE.

-I SIMILARITY: BELONGS TO THE CSF-1/PDGF RECEPTOR FAMILY OF TYROSINE-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=95301109; PubMed=7781909; Flamme I., Breier G., Risau W.; "Vascular endothelial growth factor are expressed during vasculogenesis the criail ambrone".
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eichmann A., Marcelle C., Breant C., Le Douarin N.M.; "Two molecules related to the VEGF receptor are expressed endothelial cells during avian embryonic development."; Mech. Dev. 42:33-48(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=97017121; PubMed=8863722;
Eichmann A., Marcelle C., Breant C., Le Douarin N.M.;
Eichmann A. (Dariel C.) Breant C., Le Douarin N.M.;
"Molecular cloning of Quek 1 and 2, two quail vascular endothelial
growth factor (VEGF) receptor-like molecules.";
Gene 174:3-8 (1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a copyre the swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and form of the statement is not removed. Usage by and to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         the quail embryo.";
Dev. Biol. 169:699-712(1995)
ProDom; PD000001; Prot kinase; 2.
SMART; SM00408; IGC2; 1.
SMART; SM00219; TYPKC; 1.
PROSITE; PS50835; IG LIKE; 5.
PROSITE; PS00107; PRŌTEIN_KINASE_ATP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; X83288; CAA58268.1; -.
EMBL; S65205; AAB28127.1; -.
EMBL; S78345; AAB34594.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        entities requires a license agreement (s or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                             PIR; JC4953; S5165
HSSP; P11362; 1FGK
                                                                                                                                                                                                                                           InterPro;
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                                                                                                                                                                                                                                                                                                         InterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VASCULAR PERMEABILITY.

CATALYTIC ACTIVITY: ATP + a protein tyrosine =
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PROTEIN KINASES.
                                                                                                                                                                                                         ;; IPR007110; Ig-like.;; IPR003598; Ig_c2.;; IPR003506; Ig_MHC.;; IPR000719; Prot_kinase.;; IPR001824; RTKinaseIII.; IPR001824; Tyr_pkinase.
                                                                                                                                                                                                            ; IPR001824; ; IPR001245;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OF 910-1348
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P06935;
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01-JAN-1988
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                                                                            01-JAN 1988 (Rel. 06, Created)
01-JAN 1988 (Rel. 06, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
28-FEB-2003 (Rel. 41, Last annotation update)
Genome polyprotein (Contains: Capsid protein C (Core protein); |
Genome polyprotein (Contains: Capsid protein C (Core protein); |
protein (Envelope protein M); Major envelope protein E; Nonstruproteins NS1, NS2B, NS2B, NS4A and NS4B; Protease/helicase
(EC 3.4.21.98) (NS3); RNA-directed RNA polymerase (EC 2.7.7.48)
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SIGNAL
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PROSITE; PS00109; PROTEIN_KINASE_TYR; 1.

PROSITE; PS00240; RECEPTOR_TYR_KTN_III; 1.

Angiogenesis; Signal; Transferase; Tyrosine-protein kinase; Receptor;

Angiogenesis; Signal; Phosphorylation; ATP-binding;
                     NCBI_TaxID=11082;
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                                              stage; Flaviviridae,
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E; Nonstructural
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SEQUENCE OF 255-854 FROM N.A.
MEDLINE=86072082; PubMed=3855247;
Wengler G., Castle E., Leidner U.,
Wengler analysis of the membrane
"Sequence analysis of the membrane
Nile virus and of its gene.";
Virology 147:264-274(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 1-291 FROM N.A.

MEDLINE=85274372; PubMed=2992152;
Castle E., Nowak T., Leidner U., Wengler G., Wengler G.;
"Sequence analysis of the viral core protein and the
"membrane-associated proteins VI and NV2 of the flavivirus
virus and of the genome sequence for these proteins.";
Virology 145:227-236(1985).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Castle E., Leidner U., Nowak T., Wer Primary structure of the West Nile for all nonstructural proteins."; Virology 149:10-26(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=86124703; PubMed=3753811;
{RNA}(N).
SUBUNIT: THE VIRION OF THIS
LIPOPROTEIN ENVELOPE. THE E
PROTEIN M AND GLYCOPROTEIN
PROTEIN C AND MENA.
                F THIS VIRUS IS A NUCLEOCAPSID THE ENVELOPE CONSISTS OF TWO IS A OTEIN E. THE NUCLEOCAPSID IS A
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lle flavivirus genome
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flavivirus
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Pfam; Pfam; Pfam; InterPro; IPR00 InterPro; IPR00 Pfam; PF01003; Pfam; PF02832; InterPro; Pfam; Pfam; EMBL; This SWISS-PROT entry is copyright. It is produced through a chetween the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and formodified and this statement is not removed. InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; InterPro; MEROPS; InterPro; [nterPro; [nterPro; InterPro; send an P14336; M12294; S07 IPRO00069; IPRO01157; IPRO00487; IPRO00404; IPRO00208; IPRO0208; IPRO02535; IPRO02535; IPRO02535; IPRO0167095; IPRO07095; requires a license agreement (S an email to license@isb-sib.ch). IPR001410; IPR001122; IPR000336; IPR001850; GNWVWV. 1SVB AAA48498.1; Flavi Flavi Flavi Flavi \_\_capsid; 1. i\_glycop\_C; 1. i\_glycoprot; 1. i\_helicase; 1. Plavi capsidC.
Flavi glycoprotE.
Flavi helicase.
Flavi MS.
Flavi NS.1.
Flavi NS.2A.
Flavi NS.4A.
Flavi NS.4B.
Flavi NS.4B. Helicase C.
RNA\_pol\_DS\_PS.
RNA\_pol\_PSvir. lavi\_propep (See http://www.isb-sib. restrictions for collaboration ch/announce/ commercial 9

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Best Local
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Pfam; PF01005; Flavi_NS2B; 1.
Pfam; PF01002; Flavi_NS2B; 1.
Pfam; PF01350; Flavi_NS4A; 1.
Pfam; PF01349; Flavi_NS4B; 1.
Pfam; PF001349; Flavi_NS5; 1.
Pfam; PF01570; Flavi_Propep; 1.
Pfam; PF01570; Flavi_Propep; 1.
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                                         POLG KUNJM STANDARD; PRT; 3433 AA.

PAL335; Q82983;

01-JAN-1990 (Rel. 13, Created)

11-JAN-1990 (Rel. 13, Last sequence update)

28-FEB-2003 (Rel. 41, Last annotation update)

28-FEB-2003 (Rel. 41, Last annotation update)

Genome polyprotein (Contains: Capsid protein C (Core protein); Matrix protein (Envelope protein M); Major envelope protein E; Nonstructural proteins NS1, NS2, NS4A and NS4B; Protease/helicase (EC 3.4.21.98)

(NS3); RNA-directed RNA polymerase (EC 2.7.7.48) (NS5)]

(NS3); RNA-directed RNA polymerase (EC 2.7.7.48)
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ProDom; PD001496; Flavi N
SMART; SM00487; DEXDC; 1.
SMART; SM00490; HELICC; 1
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SEQUENCE FROM N.A
                         Viruses; ssRNA positive-strand
Flavivirus.
               NCBI_TaxID=11078;
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NONSTRUCTURAL PROTEIN NS2A.
NONSTRUCTURAL PROTEIN NS2B.
PROTEASE/HELICASE (NS3)
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                                    viruses,
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                                   stage; Flaviviridae
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Pfam, PF002832; Pfam, PF002849; Pfam, PF00949; Pfam, PF001004; Pfam, PF011002; Pfam, PF011349; Pfam, PF001349; Pfam, PF001349; Pfam, PF001728; Pfam, PF001728;
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Coia G., Parker M.D., Speight G., Byrne M.E.,
"Nucleotide and complete amino acid sequences
definitive gene order and characteristics of t
                                                                           ProDom; PD001556; Flavi_9lycoprotE; 1.
ProDom; PD001596; Flavi_NS1; 1.
ProDom; PD001496; Flavi_NS1; 1.
SWART; SW00487; DEXDC; 1.
SWART; SW00490; HELICG; 1.
SWART; SW00490; HELICG; 1.
Core protein; Glycoprotein; Transferase; RNA-directed RNA-Polyprotein; Glycoprotein; Envelope protein; Hydrolase; Core protein; Coat protein; Envelope protein; Hydrolase; ATP-binding; Transmembrane; Nonstructural protein
ATP-binding; Transmembrane; Nonstructural protein
RNIT MET 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a copyright the Swiss Institute of Bioinformatics and the EMBL the European Bioinformatics Institute. There are no restrict use by non-profit institutions as long as its content is modified and this statement is not removed. Usage by and fo entities requires a license agreement (See http://www.isb-sib-entities requires a license agreement (See http://www.isb-sib-
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HSSP; P14336
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FUNCTION: THE SMALL PROTEINS NS2A, NS2B, NS4A AND NS4B AR PUNCTION: THE SMALL PROTEINS NS2BLE MEMBRAVE-RELATED FUNCT NS3 AND NS5 MAY PLAY A ROLE IN THE VIRAL RNA REPLICATION. CATALYTIC ACTIVITY: Hydrolysis of four peptide bonds in the precursor polyprotein, commonly with Asp or Glu in the P6 position, Cys or Thr in P1 and Ser or Ala in P1'. CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphospine.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBUNIT: THE VIRION OF THIS VIRUS IS A NUCLEOCAPSID COVERED LIPOPROTEIN ENVELOPE. THE ENVELOPE CONSISTS OF TWO PROTEINS: PROTEIN M AND GLYCOPROTEIN E. THE NUCLEOCAPSID IS A COMPLEX PROTEIN C AND MRNA.
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PF00972; I
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IPRO01122; Flavi
IPR000336; Flavi
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IPR007095; RNA_pol_DS_PS.
IPR007094; RNA_pol_PSvir.
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Flavi_glycoprot; 1.
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Flavi MS1; 1.

Flavi NS2a; 1.

Flavi NS2b; 1.

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Ol-FEB-1995 (Rel. 31, Last sequence update)
28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
60S acidic ribosomal protein P2.
Parthenium argentatum (Guayule rubber plant).
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots;
Asteridae; campanulids; Asterales; Asteraceae; Asteroideae;
Asteridae; Parthenium.
                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Backhaus R.A., Kuntz M., Camara B., B "Nucleotide sequence of a cDNA for a from Parthenium argentatum."; Plant Physiol. 106:395-395(1994).
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STRAIN=cv. Line 11591;
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SIMILARITY: BELONGS
                                                                                                                                                                                                                                                                                                                                                                                                                       AL Physiol. 106:395-395(1994).
FUNCTION: PLAYS AN IMPORTANT ROLE IN THE PROTEIN SYNTHESIS.
SUBUNIT: P1 AND P2 EXIST AS DIMERS AT THE
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THE L12P FAMILY OF RIBOSOMAL PROTEINS.
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NONSTRUCTURAL PROTEIN NS1.
NONSTRUCTURAL PROTEIN NS2B.
NONSTRUCTURAL PROTEIN NS2B.
PROTEASE/HELICASE (NS3).
NONSTRUCTURAL PROTEIN NS4A.
NONSTRUCTURAL PROTEIN NS4B.
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MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F., Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J., Mau B., Shao Y.;
Mau B., Shao Y.;
"The Complete genome sequence of Escherichia coli K-12.";
Science 277:1453-1474(1997).
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P76002;
15-JUL-1998
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EMBL; D90751; BAA36012.1; -.
EMBL; D90752; BAA36025.1; -.
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Oshima T., Aiba H., Baba T., Fujita K., Hayashi K., Honjo A.,
Oshima T., Aiba H., Baba T., Kajihara M., Kanai K., Kashimoto K.,
Ikemoto K., Inada T., Itch T., Kajihara M., Kanai K., Mashimoto K.,
Kimura S., Kitagawa M., Makino K., Masuda S., Miki T., Mizobuchi K.
Mori H., Motomura K., Nakamura Y., Nashimoto H., Nishio Y., Saito N
Sampei G., Seki Y., Tagami H., Takemoto K., Wada C., Yamamoto Y.,
Yano M., Horiuchi T.;
                                                                                                                                                                                                                                                                                                                                  Yano M., Horiuchi T., of the Escherichia "A 718-kb DNA sequence of the Escherichia corresponding to the 12.7-28.0 min region DNA Res. 3:137-155(1996).
                                                                               SEQUENCE
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133
                                                                               14906 MW;
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PROTEIN YCGK.
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RESULT 11
HYFA ECOLI S
ID HYFA ECOLI S
AC P23461; P76565;
AC P23461; P76565;
RT 01-NOV-1991 (Rel
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Best Local
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the European Bioinformatics Institute. The
use by non-profit institutions as a
modified and this statement is not removed.
entities requires a license agreement (See l
or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D'Adamio F., Zollo O., Moraca R., Ayroldi E., Bruscoli S., Bari Cannarile L., Migliorati G., Riccardi C.;
"A new dexamethasone-induced gene of the leucine zipper family protects T lymphocytes from TCR/CD3-activated cell death.";
Immunity 7:803-812(1997).
-I- FUNCTION: POTENTIAL CO-ACTIVATOR OF A TRANSCRIPTION FACTOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last Bequence update)
28-FBB-2003 (Rel. 41, Last annotation update)
Glucocorticoid-induced leucine zipper protein.
                                                                                Hydrogenase-4 component HYFA OR B2481.
                                                                                                         01-NOV-1991 (Rel. 20, Created)
01-NOV-1991 (Rel. 20, Last seg
16-OCT-2001 (Rel. 40, Last ann
                                                                                                                                                                                                                                                                                                                                          Transcription regulation; Nuclear protein.

DOMAIN 76 97 LEUCINE-ZIPPER.
SEOUENCE 137 AA; 15165 MW; F1007B609122A7C5
                                                                                                                                                                                                                                                                                                                                                                                GO; GO:0006916; P:anti-apoptosis; ID.
InterPro; IPR000580; TSC-22_Dip_Bun.
Pfam; PF01166; TSC22; 1.
ProDom; PD007152; TSC-22_Dip_Bun; 1.
PROSITE; PS01289; TSC22; 1.
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STRAIN=C3H/HeN;
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SEQUENCE FROM N.A
                                          Bacteria; Proteobacteria;
Enterobacteriaceae; Esche
                       NCBI_TaxID=562;
                                                                   Escherichia
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SIMILARITY; BELONGS TO THE TSC-22/DIP/BUN FAMILY.
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                                                                                                                                                                                                                                                           ELLEKNS 155
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                                                                   coli.
                                                                                                                                                                                                                                                                                     1.3%; So lilarity 100.0%; I Conservative 0;
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o O., Moraca R.,
                                          ceria; Gammaproteobacteria;
Escherichia.
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                                                                                              sequence update)
annotation update)
(EC 1.-.-).
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Pred. No
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Mismatches
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                                                         Enterobacteriales;
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PRESENTATION OF THE PRESEN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=91202105; PubMed=2016588;
Andrews S.C., Harrison P.M., Guest J.R.;
"A molecular analysis of the 53.3 minute
coli linkage map.";
J. Gen. Microbiol. 137:361-367(1991).
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Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.
Gregor J., Davis N.W., Kirkpatrick H.A., Goeden M.A., Rose D.J.,
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MEDLINE=97426617; PubMed=9278503;
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EMBL; AE000335; AAC75534.1; /
EMBL; D90876; BAA16359.1; -.
EMBL; D90877; BAA16369.1; -.
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PROSITE; PS0019
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Science 277:1453-1474(1997).
                                                                                                                                                                                                                                                                                                                                                                            EcoGene;
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8.8 min on the linkage map and
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HAMAP; MF_00417; -; 1.

InterPro; IPR000816; Peptidase_C15; 1.

Pfam; PF01470; Peptidase_C15; 1.

ProDom; P0008480; Peptidase_C15; 1.

TIGRFAMs; TIGR00504; pyro_pdase; 1.

PROSITE; PS01333; PYRASE_CIU; 1.

PROSITE; PS01334; PYRASE_CYS; 1.

Hydrolase; Thiol protease; 3D-structus

ACT_SITE 81
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=99216536; PubMed=10196127; Odagaki Y., Hayashi A., Okada K., Hirotsu K., Kabashima T., Ito I Yoshimoto T., Tsuru D., Sato M., Clardy J.; The crystal structure of pyroglutamyl peptidase I from Bacillus amyloliquefaciens reveals a new structure for a cysteine proteass Structure 7:399-411(1999).
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01-NOV-1995 (Rel. 32, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation updat
Pyrrolidone-carboxylate peptidase (EC 3.4.1)
(Porrodlutamyl-peptidase I) (PGP-
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P46107;
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MEDLINE=93203177; P
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Bacteria; Firmicutes; Baci
                                                                                                                                                                                                                          PIR; JX0244; JX0244.
PDB; 1AUG; 23-MAR-99.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            peptide.
SUBUNIT: Homotetramer.
SUBURIT: Homotetramer.
SUBCELLULAR LOCATION: Cytoplasmic.
MISCELLANEOUS: MOST ACTIVE AT PH 6.5 AND STANICELLANEOUS: MOST ACTIVE AT PH 6.5 AND STANILARITY: BELONGS TO PEPTIDASE FAMILY C15.
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RESIDUES EXCEPT L-PROLINE.
CATALYTIC ACTIVITY: 5-oxoprolyl-peptide + H(2)0
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162
205
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01-DEC-1992 (Rel. 41, Last annotation update)
28-FEB-2003 (Rel. 41, Last annotation update)
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                           Ogawa K.-I., Akagawa E., Nakamura K., Yamane K.; "Determination of a 21548 bp nucleotide sequence region of the Bacillus subtilis chromosome.";
                                                                                                                                                      Bacillus subtilis.
                    Microbiology 141:269-275(1995)
                                                MEDLINE=95219079; PubMed=7704254;
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RA Borriss R., Boursier L., Brans A., Braun M., Brignell S.C., Bron S.,
RA Browillet S., Eruschi C.V., Caldwell B., Capuano V., Carter N.M.,
RA Choi S.K., Codani J.J., Connerton I.F., Cummings N.J., Daniel R.A.,
RA Choi S.K., Errington J., Fabret C., Ferrari E., Foulger D.,
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RA Chim S.Y., Glaser P., Goffeau A., Golightly E.J., Galleron N.,
RA Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A.,
RA Guiseppi G., Guy B.J., Haga K., Haiech J., Harwood C.R., Henaut A.,
RA Hibert H., Holsappel S., Hosono S., Hullo M.F., Itaya M., Jones L.,
RA Kobayashi Y., Koetter P., Koningstein G., Krogh S., Kumano M.,
RA Kurita K., Lapidus A., Lardinois S., Lauber J., Lazarevic V.,
RA Lee S.M., Levine A., Liu H., Masuda S., Mauel C., Medigue C.,
RA Medina N., Mellado R.P., Mizuno M., Woestl D., Nakai S., Noback M.,
RA Parro V., Pohl T.M., Portetelle D., Porwollik S., Prescott A.M.,
RA Parecan E., Pujic P., Purnelle B., Rappoort G., Rey M., Reynolds S.,
RA Rieger M., Rivolta C., Rocha E., Roche B., Rose M., Sadaie Y.,
RA Sato T., Scanlan E., Schleich S., Schroeter R., Scoffone F.,
RA Sekiguchi J., Sekowska A., Sercor S.J., Serror P., Shin B.S., Soldo B.,
RA Raketchi M., Tanakoshi A., Tanaka T., Tarashashi H., Takemaru K.,
RA Yoshida K., Yoshikawa H.F., Zumanoto H., Yamane K., Yasumoto K., Yata K.,
The Complete genome sequence of the Gram-positive bacterium Bacillus
RT Subtilis ", Schowske A.F., Zumanec G., Yata K.,
Tata Bacillus Bacillus
EMBL; X66034; CAA46833.1; -.

EMBL; D30808; BAA06485.1; -.

EMBL; A25847; CAA01777.1; -.

EMBL; Z99105; CAB12059.1; -.

PIR; S2332; S23432.

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HAMAD; MF 00411; -; 1.

InterPro; IPR000816; Peptidase C15; I.

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Gonzales T., Awade A., Besson C., Robert-Baudouy J.;
"Purification and characterization of recombinant pyrrolidone carboxyl
peptidase of Bacillus subtilis.";
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- FUNCTION: REMOVES 5-OXOPROLINE FROM VARIOUS PENULTIMATE AMINO ACID RESIDUES EXCEPT L-PROLINE.
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-!- FUNCTION: COMPONENT OF TIGHT JUNCTION (TJ) STRANDS.
-!- SUBCELLULAR LOCATION: Integral membrane protein.
-!- SIMILARITY: Belongs to the claudin family.
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Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claudin-9
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30-MAY-2000
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Tight junction; Transmembrane.
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23774 MW; A88041177BCCFE24 CRC64;
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0; Mismatches
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MBL outstation -
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Claudin-9

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RESULT 16
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Best Local S
Matches 7
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InterPro; IPR006188; Claudin sup.
InterPro; IPR004031; pmP22 Claudin.
Pfam; PF00822; PMP22 Claudin; 1.
PRINTS; PR01077; CLAUDIN; 1.
PROSITE; PS01346; CLAUDIN; 1.
Tight junction; Transmembrane.
                           MEDLINE=95350630; PubMed=7542800;
Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D., McKenney K., Sutton G., Fitzhugh W., Fields A., Kelley J.M., Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M., Weldman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D. Utterback T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R. Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M., Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                 YG18 HAEIN
P45275;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Morita K., Furuse M., Tsukita S.;
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ (-1- FUNCTION: COMPONENT OF TIGHT JUNCTION (TJ) (-1- SUBCELLULAR LOCATION: Integral membrane pro-
Venter J.C.;
"Whole-genome random Rd.";
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between the Swiss Institute of Bioinformatics and the EMBL outst
the European Bioinformatics Institute. There are no restrictions
                                                                                                                                                                  STRAIN=Rd
                                                                                                                                                                              SEQUENCE FROM
                                                                                                                                                                                                                    Pasteurellaceae;
                                                                                                                                                                                                                                 Bacteria; Proteobacteria;
                                                                                                                                                                                                                                                                          Hypothetical
                                                                                                                                                                                                                                                                                         28-FEB-2003
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               use by non-profit institutions as long as its content modified and this statement is not removed. Usage by ar
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                Haemophilus
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217 #
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KW20 / ATCC 51907;
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                                                                                                                                                                                                                                                                                                                                               STANDARD;
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                                                                                                                                                                                                                                                                       transporter ATP-binding protein HI1618
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22984 MW;
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            sequencing
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                                                                                                                                                                                                                                 Gammaproteobacteria;
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Pred. No. 40;
0; Mismatches
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           and assembly
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                                                                                                                                                                                                                                                                                       update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1;
                                                                                                                     Clayton R.A., Kirkness E.F.,
Dougherty B.A., Merrick J.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40;
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            of Haemophilus influenzae
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RESULT 17
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TIGR; HI1618; -.
InterPro; IPR003593; AAA ...
InterPro; IPR003439; ABC_transporter.
Pfam; PF000005; ABC tran; 1.
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051353;
15-DEC-1998
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                         between the Swiss Institute of Bioinformat
the European Bioinformatics Institute. The
use by non-profit institutions as long
modified and this statement is not removed.
entities requires a license agreement (See
                                                     This SWISS-PROT entry is copyright. It is promise and the man the Swiss Institute of Bioinformatics and the man the Swiss Institute. There are no restrict in the swiss its content as its content are no particular in the swiss in the swiss in the swiss its content are no particular in the swiss in the sw
                                                                                                                                                                                                                                                                                                                              Nature 390:580-586(1997).
                                                                                                                                                                                                                                                                                                                                                                                          "Genomic sequence of burgdorferi.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=ATCC 35210 / B31;
MEDLINE=98065943; PubMed=9403685;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PROSITE; PS00211; ABC TRANSPORTER 1; PROSITE; PS50893; ABC TRANSPORTER 2; Hypothetical protein; ATP-binding; Tr NP_BIND 46 53 ATP (POT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Borrelia burgdorferi (Lyme disease spirochete)
Bacteria; Spirochaetes; Spirochaetales; Spiroc
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16-OCT-2001
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                                                                                                                                                                                                                                         IS BOUND TO THE RIBOSOME. SIMILARITY: BELONGS TO THE
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      email to license@isb-sib.ch)
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217 AA; 24079 MW;
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(Rel. 37, Last sequence up
(Rel. 40, Last annotation
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                            noved. Usage by and for (See http://www.isb-sib
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                                  .ch/announce/
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GU45_RAT
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InterPro; IPR002143; Ribosomal_L1.
Pfam; PF00687; Ribosomal_L1; 1.
ProDom; PD001314; Ribosomal_L1; 1.
PTGRFAMe; TIGR01169; TplA bact; 1.
PROSITE; P801199; RIBOSOMĀL_L1; 1.
RRDOSOMĀL PROSITE; P801199; RIBOSOMĀL L1; 1.
RRDOSOMĀL PROSITE; PROSITE; P801199; COmplete proteome.
Ribosomal protein; rRNA-binding; Complete proteome.
SEQUENCE 226 AA; 25668 MW; 980CCZEE949BB02D CRC
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PIR; G70148; G70148.
HSSP; P27150; 1AD2.
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Rattus norvegicus (Rat).
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Ol-JUN-1994 (Rel. 29, Created)

Ol-JUN-1994 (Rel. 29, Last sequence update)

30-MAY-2000 (Rel. 39, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GU45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=Fischer; TISSUE=Lingual epithelium; MEDLINE=93138133; PubMed=8380780; Abe K., Kusakabe Y., Tanemura K., Emori Y.
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PROSITE; PS00237; G_PROTEIN RECEP F1 2; 1.

PROSITE; PS50262; G_PROTEIN RECEP F1 2; 1.

G-protein coupled receptor; Transmembrane; Glycoprotein.
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Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rat
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Multiple genes for G protein-coupled receptors and their expression
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                                                                                                                                                                                                                                                                       CRANSMEM
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Similarity 7; Conserv
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100.0%; Pr
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                     Score 7;
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                                                                                                                        EXTRACELLULAR (POTENTIAL) 7 (POTENTIAL) .
BY SIMILARITY.
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CYTOPLASMIC (POTENTIAL).
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    Mismatches
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o. 42;
                     DB 1;
o. 43;
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RESULT 19
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-OCT-1989 (Rel. 12, Created)
01-OCT-1989 (Rel. 12, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
High affinity immunoglobulin epsilon receptor alpha-subunit precursor (FCERI) (IgE FC receptor, alpha-subunit) (FC-epsilon RI-alpha).
FCERIA OR FCEIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=93113350; PubMed=1472946;
Padlan E.A., Helm B.A.;
Padlan E.A., telm b.A.;
"A modeling study of the alpha-subunit receptor for immunoglobulin-E.";
Receptor 2:129-144(1992).
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P12319;
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                                                                                                                                                                                                     EMBL; X06948; CAA30025.1; -.
EMBL; J03605; AAA36204.1; -.
EMBL; A21606; CAA01564.1; -.
                                                                                                                                                                                                                                                                                                                                                     the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for content is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               This
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Human and rat mast cell high-affinity immunoglobulin E receptors: characterization of putative alpha-chain gene products.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Isolation of the gene coding for
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=88158102; PubMed=2964640;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens (Human)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FUNCTION: BINDS TO THE FC REGION OF IMMUNOGLOBULINS EPSILON. HIGH APPINITY RECEPTOR. RESPONSIBLE FOR INITIATING THE ALLERGIC RESPONSE. BINDING OF ALLERGEN TO RECEPTOR-BOUND IGE LEADS TO CELL ACTIVATION AND THE RELEASE OF MEDIATORS (SUCH AS HISTAMINE) RESPONSIBLE FOR THE MANIFESTATIONS OF ALLERGY. THE SAME RECEPTOR ALSO INDUCES THE SECRETION OF IMPORTANT LYMPHOKINES. SUBUNIT: TETRAMER OF AN ALPHA CHAIN, A BETA CHAIN, AND TWO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DISULFIDE LINKED GAMMA CHAINS.
SUBCELLULAR LOCATION: Type I membrane protein.
SIMILARITY: Contains 2 immunoglobulin-like domains.
1ALS; 27-FEB-95.
1ALT; 27-FEB-95.
1F2Q; 08-JUN-00.
1J86; 29-AUG-01.
1J86; 29-AUG-01.
1J87; 29-AUG-01.
1J88; 29-AUG-01.
1J89; 05-SEP-01.
                                                                                                                                                                                                                                                                                                                                                                                                                                    SWISS-PROT entry is copyright. It is produced through sen the Swiss Institute of Bioinformatics and the EN
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                                                                                                                                                                                S00682;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                of putative alpha-chain gene products."; sci. U.S.A. 85:1907-1911(1988).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PubMed=1472946;
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for the alpha subunit
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RESULT 20
YQD1_CAEEL .
ID YQD1_CAE
AC Q09262;
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Best Local (
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GO; GO:0005887; C:integral to pl. InterPro; IPR003598; Ig_C2. InterPro; IPR003006; Ig_MHC. Pfam; PF00047; ig; 2. SWART; SM00408; IGC2; 1. PROSITE; PS50835; IG_LIKE; 2. IGE-binding protein; Receptor; TImmunoglobulin domain; Repeat; 3 SIGNAL
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                          CAEEL
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                                                                                                                      . Similarity 7; Conserv
                                                                                                  GSLSEET 385
                                                                              GSLSEET
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152
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100.0%; Pr
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RECEPTOR
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POTENTIAL.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Transmembrane; Glycoprotein; Signal; 3D-structure.
                                                                                                                                                                F183BB2357DDAD58 CRC64;
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                                                                                                                       Mismatches
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CDSA_PSEAE
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Best Local
SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

STRAIN=AFCC 15692 / PAO1;

STRAIN=20437337; PubMed=10984043;

MEDLINE=20437337; PubMed=10984043;

Stover C.K., Pham X.-Q.T., Erwin A.L., Mizoguchi S.D., Stover C.K., Pham K.-Q.T., Erwin A.L., Hufnagle W:O., Kowalik D. Hickey M.J., Brinkman F.S.L., Hufnagle W:O., Kowalik D. Garber R.L., Goltry L., Tolentino E., Westbrock-Wadman Garber R.L., Goltry L., Folger K.R., Kas A., Larbig F
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1997
28-FEB-2003
28-FEB-2003
                                                                                                            Taguchi K., Fu
"Cloning of tl
synthetase.";
                                                                                                                                                                                                       01-NOV-1997 (Rel. 35, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Phosphatidate cytidylyltransferase (EC 2.7.7.41) (CDP-diglyceride synthetase) (CDP-diglyceride pyrophosphorylase) (CDP-diacylglycerol synthase) (CDS) (CTP:phosphatidate cytidylyltransferase) (CDP-DAG synthase) (CDP-DG synthetase).
CDSA OR CDS OR PA3651.
Pseudomonas aeruginosa.
Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomonadales;
                                                                                                                            SEQUENCE FROM N.A.
STRAIN=ATCC 15692 / PAO1;
STRAIN=ATCC 15692 / PubMed=8654980;
MEDLINE=96257274; PubMed=8654980;
MEDLINE=96257274; PubMed=8654980;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Waterston
Submitted
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Eukaryota; Metazoa; Nematoda;
Rhabditidae; Peloderinae; Cae
                                                                                                                                                                                                                                                                                                                 Q59640;
                                                                                                                                                                                                                                                                                                                            CDSA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypothetical protein SEQUENCE 263 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U23511; AAC46789.2; WormPep; C32D5.1; CE29207.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hypothetical C32D5.1.
                                                                                                  Gene 172:165-166(1996).
                                                                                                                                                                                  Pseudomonadaceae; Pseudomonas.
NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               between the Swiss Institute of Bioinfo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted
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STRAIN=Bristol N2;
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(SEP-2001)
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(Rel. 41,
(Rel. 41,
l protein
                                                                                                                      the Pseudomonas aeruginosa
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41, Last sequence update)
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Caenorhabditis.
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Pred. No.
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                                                                                                                                 Kato J.,
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D.J., Lagrou M.
n S., Yuan Y.,
K., Lim R.M.,
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RESULT 22
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Matches 7
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                                                                                                                                                                                                                         UPK YERPE
Q8ZT65;
28-FEB-2003
28-FEB-2003
28-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; D50811; BAA0943'
EMBL; AE004785; AAG07'
PIR; F83188; F83188.
PIR; JC4832; JC4832.
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CONFLICT
SEQUENCE
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TRANSMEM
TRANSMEM
STRAIN=CO-92 / Biovar Orientalis;

MEDLINB=21470413; PubMed=11586360;

Parkhill J., Wren B.W., Thomson N.R., Titball R.W., Holden M.T.

Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.

Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga F.

Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G.,

Feltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V.,

Leather S., Moule S., Oyston P.C.F., Quall M., Rutherford K.,

Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM TRANSMEM
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pROSITE; PS01315; CDS; 1.
Transferase; Nucleotidyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement (Some send an email to license@isb-sib.ch).
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UPK OR BACA OR YPO0649 OR Y3530
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                                                                                                                                                                                                              Putative undecaprenol
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                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                 Enterobacteriaceae;
                                                                                                                                                              Yersinia pestis.
Bacteria; Proteobacteria; Gammaproteobacteria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            nterPro; IPR000374; PCtransf.
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PATHWAY: Phospholipid biosynthesis.
SUBCELLULAR LOCATION: Integral memb
SIMILARITY: BELONGS TO THE CDS FAMI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SWISS-PROT entry is copyright. It is produced through een the Swiss Institute of Bioinformatics and the EN
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_arity 100.0%;
Conservative
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                                                                                                                                                                                                            (Rel. 41, Created)
(Rel. 41, Last sequence update)
(Rel. 41, Last snotation update)
decaprenol kinase (EC 2.7.1.66) (Bacitracin
                                                                                                                                                                                                                                                                                                                                                                                                                                                ; Inner membrane;

12 32 PO

53 73 PO

53 75 PO

75 95 PO

71 131 PO

74 194 PO

74 194 PO

79 219 PO

51 271 PO

51 133 WP
                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                           STANDARD;
                                                                                                                                                                                                                                                                                                                                       208
                                                                                                                                                   Yersinia.
                                                                                                                                                                                                                                                                                                                                                                                                                                      28856 MW;
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Pred. No
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WPL -> VAA (IN REF.
5025059C3F1A64C7
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Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Phospholipid biosynthesis;
                                                                                                                                                                                                                                                                            272
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o. 49;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            proteome.
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                                                R.W., Holden M.T.G.,
her C., Mungall K.L.,
Cerdeno-Tarraga A.M.,
                                                                                                                                                                                                                                                                                                                                                                                                            Length 271;
                                                                                                                                                                                                                                                                                                                                                                                       0
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                                                                                                                                                                Enterobacteriales;
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CRC64;
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PAO1, ar
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RESULT 23
GLPG_ECOLI STAN
AC P09351; P76691;
DT 01-MAR-1989 (Rel. 1
DT 01-NOV-1995 (Rel. 3
DT 16-OCT-2001 (Rel. 4
   RN OCCOGNED TO ACC
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                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 7
Protein glpG.
GLPG OR B3424.
Escherichia coli.
Bacteria; Proteobacteria; GEnterobacteriaceae; Escheri.
NCBI_TaxID=562;
[1]
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Pfam; PF02
TIGRFAMs;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Genome sequence of Yersinia pestis KIM.";

J. Bacteriol. 184:4601-4611(2002).

-i- FUNCTION: Probably phosphorylates undecaprenol
phosphate. Confers resistance to bacitracin (B)

-i- CATALYTIC ACTIVITY: ATP + undecaprenol = ADP +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AJ414144; CAC89503.1; EMBL; AE013956; AAM87078.1; PIR; AD0080; AD0080:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=22137863; PubMed=12142430;
Deng W., Burland V., Plunkett G. III, Boutin A.,
Perna N.T., Rose D.J., Mau B., Zhou S., Schwartz
Fetherston J.D., Lindler L.E., Brubaker R.R., Plu
Straley S.C., McDonough K.A., Nilles M.L., Matson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nature
[2]
                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR; AD0080; AD0080:
HAMAP; MF_01006; -; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   or send an
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                                                                                                                                                                                                                                                                                                                                                                                                          Transferase;
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Nature 413:523-527(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             phosphate.
SUBCELLULAR LOCATION: Integral membrane protein (Probab SUBCELLAURAR LOCATION: Integral membrane protein (Probab MISCELLANEOUS: Bacitracin is thought to be involved in of peptidoglycan synthesis by sequestering undecaprenyl diphosphate reducing the pool of lipid carrier availabl SIMILARITY: BELONGS TO THE UPK FAMILY.
                                                                                                                                                                                             128
                                                                                                                                                                                                                  464
                                                                                                                                                                                                                                                                                                                                                                                                          PF02673; BacA; 1.
AMs; TIGR00753; undec_kin_bacA;
ferase; Kinase; AntibIotic resi
                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                  GGVLLLA 470
                                                                                                                                                                                             GGVLLLA 134
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                                                                                                                                                                                                                                                                                      253
272
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                                                                                                                                                                                                                                           Conservative
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Biovar Mediaevalis;
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                        Escherichia
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                                                                                     Last
Last
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                                      Gammaproteobacteria;
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                                                                                     sequence
annotation
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                                                                                                update)
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5. 49;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          carrier available
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                                                                                                                                                                                                                                                                                                                                                                                                            Transmembrane;
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                                                                                                                                                                                                                                                                 Length 272;
                                       Enterobacteriales;
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D.C.,
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y similarity).
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in no way
commercial
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FROM N.A.,

AND SEQUENCE

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RESULT 24
DAPF BAPF B
ID DAPF B
AC Q8K901
DT 28-FEB
DT 28-FEB
DT 28-FEB
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DT BAPF O
OS Buchne
OC Bacter
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Best Local
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                                                                                                                                28-FEB-2003
28-FEB-2003
28-FEB-2003
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CONFLICT
                                                    28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Diaminopimelate epimerase (EC 5.1.1.7) (DAP epimerase).
DAFF OR BUSG568.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M54940; AAA23890.1; -.
EMBL; M96795; AAC28166.1; -.
EMBL; X07520; CAA30398.1; -.
EMBL; U18997; AAA58222.1; ALT_INIT.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIINE-88319970; PubMed-3045764; Choi Y.-L., Kawase S., Nishida T., Sakai H., Komano T., Kawam Utsumi R., Kohara Y., Akiyama K.; "Nucleotide sequence of the glpR gene encoding the repressor glycerol-3-phosphate regulon of Escherichia coli K12."; Nucleic Acids Res. 16:7732-7732(1988).
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MEDLINE=97113527; PubMed=895550;,
Zeng G., Ye S., Larson T.J.;
Zeng G., Ye S., Larson T.J.;
"Repressor for the sn-glycerol 3-phosphate regulon of Escherichia
"Repressor for the sn-glycerol 3-phosphate regulon of the DNA-binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AE000418; AAC
PIR; C65138; BVECGG
                                                                                                                                                                                                                             DAPF_BUCAP
Q8K901;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Glycerol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its the European Bioinformatics Institute. There are no restrictions on its use of the property of the pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-97426617; PubMed-9278503;
Blattner F.R., Plunkett G. III, Bloch C.A.,
Riley M., Collado-Vides J., Glasner J.D., R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
Buchnera aphidicola (subsp. Schizaphis graminum).
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
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InterPro; IPR002610; Rhomboid.
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STRAIN=K12;
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                                                                                                                                (Rel. 41, 1) (Rel. 41, 1) (Rel. 41, 1)
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193
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209 H-T-H MOTIF (BY
47 R -> H (IN REF.
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RESULT 25 .
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HAMAP; MF_UULL...
InterPro; IPR001653; DAF_C;
Pfam; PF01678; DAP_epimerase; 2.
R TIGR70852; DapF; 1.
R TIGR70852; DapF; 1.
R TGR70852; DapF; 1.
R TGR70852; DapF; 1.
R TGR70852; DapF; 1.
R PROSITE; PS01326; DAF EPIMERASE; FALSE NEG.
BR SIMILARITY.
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Best Local
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16-OCT-2001 (Rel. 40, Last sequence up
28-FEB-2003 (Rel. 41, Last annotation
Shikimate kinase (EC 2.7.1.71) (SK).
AROK OR MTH805.
                                                                                                                                                                                                                                                                                                                                               AROK_METTH
026896;
16-OCT-2001
          Smith D.R., Doucette-Stamm L.A., Deloughery C., Lee H.-M., Dubois Aldredge T., Bashirzadeh R., Blakely D., Cook R., Gilbert K., Harrison D., Hoang L., Keagle P., Lumm W., Pothier B., Qiu D., Spadafora R., Vicare R., Wang Y., Wierzbowski J., Gibson R., Jiwani N., Caruso A., Bush D., Safer H., Patwell D., Prabhakar S., McDougall S., Shimer G., Goyal A., Pietrovski S., Church G.M., Daniels C.J., Mao J.-I., Rice P., Noelling J., Reeve J.N.; "Complete genome sequence of Methanobacterium thermoautotrophicum deltaH: functional analysis and comparative genomics."; J. Bacteriol. 179:7135-7155(1997).
                                                                                                                                                                    STRAIN=Delta H;
MEDLINE=98037514; PubMed=9371463;
                                                                                                                                                                                                                                            Methanobacterium thermoautotrophicum.
Archaea; Euryarchaeota; Methanobacteria;
Methanobacteriaceae; Methanothermobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            entities requires a license agreement (S or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Tamas I., Klasson I., Canbaeck B., Naeslund A.K., Wernegreen J.J., Sandstroem J.P., Moran N.A., Ande "50 million years of genomic stasis in endosymbiot Science 296:2376-2379 (2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AE014130; AAM68104.1; -.
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7; Conserv
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 amino
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The diaminopimelate epimerase
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bacteria.";
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pathway;
              3-phosphate
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InterPro; IPR006204; GHMP kinase.
InterPro; IPR006203; GHMPknse ATP.
InterPro; IPR000870; Homoser_Kin.
Pfam; PF00288; GHMP kinases; 1.
PRINTS; PR00958; HOMSERKINASE.
PROSITE; PS00627; GHMP KINASES ATP; 1.
Aromatic amino acid biosynthesis; Transf
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Q58137;
01-NOV-1997
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16-OCT-2001
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between the Swiss Institute of Bioinformatics and the EMBL outstation -
the European Bioinformatics Institute. There are no restrictions on its
use by non-profit, institutions as long as content is in no way
modified and this statement is not removed. Usage by and for commercial
entitles requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
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STRAIN=JAL-1 / DSN
                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through
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Methanocaldococcaceae; Methanocaldococcus.
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SUBCELLULAR LOCATION: Cytoplasmic (Probable).
SIMILARITY: BELONGS TO THE GHMP KINASE FAMILY.
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ILARITY: SOME, TO COENZYME F420 HYDROGENASE ALPHA SUBUNIT.
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(Rel. 35, Last sequence update)
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RESULT 27
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      Parkhill J., Wren B.W., Thomson N.R., Titball R.W., Holden M.T.G., Prentice M.B., Sebaihia M., James K.D., Churcher C., Mungall K.L., Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M. Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G., Feltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V., Leather S., Moule S., Oyston P.C.F., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitchead S., Barrell B.G., "Genome sequence of Yersinia pestis, the causative agent of plague. Nature 413:523-527(2001).
                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
SEQUENCE FROM N.A.
STRAIN=KIM5 / Biovar Mediaevalis;
MEDLINE-98427122; PubMed=9746557;
MEDLINE-98427122; PubMed=9746557;
Perry R.D., Straley S.C., Fetherston
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01-NOV-1995 (Rel. 32, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation updat
Yop proteins translocation protein 0.
YSCQ OR YPCD1.43 OR Y5035 OR Y0038.
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STRAIN-KINS / Biovar Mediaevalis;
MEDLINE=94131934; PubMed=8300512;
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P42713;
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PIR; G64390; G64390.
TIGR; MJ0727; -.
                                                                                                                                          STRAIN=CO-92 / Biovar Orientalis;
MEDLINE=21470413; PubMed=11586360
                                                                                                                                                           SEQUENCE FROM N.A. STRAIN=CO-92 / Bio
                                                                                                                                                                                                                                         MEDLINE=98422474; PubMed=9748454;
Hu P., Elliott J., McCready P., Skowronski E., Garnes
Kobayashi A., Brubaker R.R., Garcia E.;
                                                                                                                                                                                                                                                                                  STRAIN=KIM5 /
                                                                                                                                                                                                                                                                                                                                                                                                                                             Fields K.A., Plano G.V., Straley S.C.;
"A low-Ca2* response (LCR) secretion (ysc) locus region of the LCR plasmid in Yersinia pestis.";
J. Bacteriol. 176:569-579(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Yersinia pestis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YERPE
                                                                                                                                                                                                   J. Bacteriol. 180:5192-5202(1998)
                                                                                                                                                                                                                "Structural organization pestis.";
                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                    "DNA sequencing and analysis of the Yersinia pestis KIM5.";
                                                                                                                                                                                                                                                                                                                                                                                                                                 2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Enterobacteriaceae;
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                                                                                                                                                                                                                                                                                                                       Infect. Immun.
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 SIMILARITY:
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llarity 100.0%;
Conservative
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 BELONGS
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                                                                                                                                               PubMed=11586360;
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TO THE
                                                                                                                                                                                                                              of virulence-associated
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Mismatches
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4DAAD534096A680D CRC64;
YOP SECRETION MACHINERY FLIN/MOPA/SPAO FAMILY.
                                                                                                                                                                                                                                                                                                                                                   low-Ca2+-response
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P40296;
01-FEB-1995 (Rel. 31, Creau O1-FEB-1995 (Rel. 36, Last se O1-FEB-1998 (Rel. 36, Last are response)
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Best Local
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EMBL; AF074612; AAC69788.1; -.
EMBL; AF053946; AAC62561.1; -.
EMBL; AL111189; CAB54920.1; -.
EMBL; AL111189; CAB54920.1; -.
PIR; A36955; A36955.
InterPro; IPR001172; Flagellar F1:
InterPro; IPR001383; SecIIIOMPO.
InterPro; IPR001543; SpoA.
                                                                                           between the Swiss Institute of Bioinformat
the European Bioinformatics Institute. The
use by non-profit institutions as long
modified and this statement is not removed.
entities requires a license agreement (See
or send an email to license@isb-sib.ch).
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               Pfam; PF01052; SpoA;
                                                      EMBL; L25667; AAA27677.1; -.
InterPro; IPR001172; Flagellar_FliN.
                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                   Bergman T., Erickson K., Galyov E., Persson C., Wolf-Watz H.;
"The lcrB (yscN/U) gene cluster of Yersinia pseudotuberculosis
involved in Yop secretion and shows high homology to the spa ge
clusters of Shigella flexneri and Salmonella typhimurium.";
J. Bacteriol. 176:2619-2626(1994).

-i- FUNCTION: COMPONENT OF THE YOP SECRETION MACHINERY.
                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
Enterobacteriaceae; Yersinia.
                                                                                                                                                                                                                                                                                                                                                                                                     Plasmid pIB1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01052; SpoA; 1.
PRINTS; PR00956; FLGMOTORFLIN.
PRINTS; PR01339; TYPE30MOPROT.
ProDom; PD001777; SpoA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       entities requires a license agreement (S or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                   MEDLINE=94222840; PubMed=8169210;
                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=633;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           between
                         InterPro; IPR003283; SecIIIOMPO
InterPro; IPR001543; SpoA.
                                                                                                                                                                                                                                                                                                                                                                                                                   Yersinia pseudotuberculosis.
                                                                                                                                                                                                      !- SIMILARITY: BELONGS TO THE FLIN/MOPA/SPAO FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AYVGENP 251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Protein transport; Plasmid; Virulence; Complete proteome 307 AA; 34418 MW; A936083F4EICC6C4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                           translocation protein Q.
 FLGMOTORFLIN
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                                                                                                         noved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
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Best Local
                                                         PROSITE; PS00666; COMPLEXI ND1 1; FALSE NEG.
PROSITE; PS00668; COMPLEXI ND1 2; FALSE_NEG.
Oxidoreductase; NAD; Quinone; Transmembrane; Co
TRANSMEM 15 35
TRANSMEM 1101
POTENTIAL.
TRANSMEM 114 .134
TRANSMEM 14 .134
TRANSMEM 14 .69
TRANSMEM 15 .60
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. P57258;
16-OCT-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=Tokyo 1998;
MEDLINE=20445173; PubMed=10993077;
Shigenobu S., Watanabe H., Hattori M., Sakaki Y
"Genome sequence of the endocellular bacterial
Buchnera sp. APS.";
Nature 407:81-86(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Transport;
                                                                                                                                                                                                                                                                                                                                                     entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                 the European Bioinformatics Institute. There are no resuse by non-profit institutions as long as its content modified and this statement is not removed. Usage by an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the cytoplasmic membrane), and thus conserves the redox en a proton gradient (By similarity).

-I- CATALYTIC ACTIVITY: NADH + quinone = NAD(+) + quinol.

-I- SUBUNIT: COMPOSED OF 13 DIFFERENT SUBUNITS. SUBUNITS NUOA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          symbiotic bacterium).
Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-PBB-2003 (Rel. 41, Last annotation updat
NADH-quinone oxidoreductase chain H (EC 1.6
                                                                                                                                                                                                                                                                  InterPro; IPR001694; Resp_NADH_dh1.
Pfam; PF00146; NADHdh; 1.
                                                                                                                                                                                                                                                                                                              EMBL; AP001118; BAB12878.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced throubetween the Swiss Institute of Bioinformatics and the

    -!- SUBCELLULAR LOCATION: Integral membrane protein.
    -!- SIMILARITY: BELONGS TO THE COMPLEX I SUBUNIT 1 FAMILY.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Buchnera aphidicola (subsp. Acyrthosiphon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUOH OR BU160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=118099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Enterobacteriaceae; Buchnera.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FUNCTION: NDH-1 shuttles electrons from NADH, via FMN and iron-sulfur (Fe-S) centers, to quinones in the respiratory chain. Couples the redox reaction to proton translocation (for every two electrons transferred, four hydrogen ions are translocated across
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        196 AYVGENP 202
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Pred. No.
    F251144E9A66AB52 CRC64;
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(EC 1.6.99.
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RESULT 30
FHR4_HUMAN
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Matches 7
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Eukaryota; Metazoa; C
Mammalia; Eutheria; P
NCBI_TaxID=9606;
                                        MIM; 605337; -.
GO; GO:0005320; F:apolipoprotein; T
GO; GO:0005209; F:plasma protein; T
InterPro; IPR000436; Sushi_SCR_CCP.
                                                                                                EMBL;
                                                                                                                                              the European Bioinformatics Institute. There are no rest
use by non-profit institutions as great content
modified and this statement is not removed. Usage by an
entitles requires a license agreement (See http://www.isb-
or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                            MEDLINE=98136603; PubMed=9476126;
Hellwage J., Skerka C., Zipfel P.F.;
"Blochemical and functional characterization protein 4 (FHR-4).";
                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 1-19 FROM N.A.

Male D.A., Ormsby R.J., Giannakis E., Gordon D.L.;

"Promoter region of complement factor H-related 4 (fHR-4)

Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Complement factor H-related protein 4 precursor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q92496; Q9UJY6;
                      InterPro; IPR000436; Su
Pfam; PF00084; sushi; 5
SMART; SM00032; CCP; 4
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                                                                                                                        EMBL; X98337;
                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
                                                                                                                                                                                                                                                                                                                                                                                                                 CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Skerka C., Hellwage J., Weber W., Tilkorn A.,
Kampen E., Beisiegel U., Zipfel P.F.;
"The human factor H-related protein 4 (FHR-4)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           * poproteins.";
.ipoproteins.";
* aiol Chem. 272:5627-5634(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            repeat-containing protein is associated
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                                                                                                                                                                                                                                                                                                                                                   mmunopharmacology 38:149-157(1997)
                                                                                                                                                                                                                                                SIMILARITY: Contains 5 Sushi (SCR) SIMILARITY: STRONG, TO FACTOR H.
                                                                                                                                                                                                                                                                                                   FUNCTION: INVOLVED IN COMPLEMEN
LIPOPROTEINS AND MAY PLAY A ROL
SUBUNIT: Homodimer.
SUBCELLULAR LOCATION: Secreted.
                                                                                                                                                                                                                                                                          TISSUE SPECIFICITY: Synthesized PTM: GLYCOSYLATED.
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                                                                                             X98337; CAA66980.1; -..
AF190816; AAF05951.1; -.
P10998; IVVD.
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LIAGLAV 206
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Signal.
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AC P19198;
DT 01-NOV-1990
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                      MEDLINE-9111772; PubMed-1989693;
Bonfils C., Hebert J., Tsang A.;
"A 27-bp deletion is responsible for the expression of CABP1, a cyclic AMP-binding protein of Dictyostelium Biochim. Biophys. Acta 1088:145-146 (1991).

-i- SUBUNIT: HETERODIMER OF CABP1A AND CABP1B. CABP1A.
ALSO ASSOCIATE WITH 931/P34 TO FORM AN ACTIVE COM-1- ALTERNATIVE PRODUCTS:
                                                                                                                       Grant C., Tsang A.:.
"Cloning and characterization of binding protein in Dictyostelium Gene 96:213-218(1990).
                                                                                                                                                                                            Grant C.E., Bain G., Teang A.;
"The molecular basis for alternative splicing transcripts in Dictyostelium discoideum.";
Nucleic Acids Res. 18:5457-5463(1990).
                                                                                                                                                                                                                                                                NCBI_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                              STRAIN=V12M2;
                                                                                                                                                         MEDLINE=91099678;
                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                         STRAIN=AX2
                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                         Dictyostelium discoideum (Slime mold).
Eukaryota; Mycetozoa; Dictyosteliida;
                                                                                                                                                                                                                                                                                            CAPA OR CABP1.
                                                                                                                                                                                                                                                                                                    CAMP binding
                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                               MEDLINE=91016829; PubMed=2216719;
         Event=Alternative splicing;
Name=1; Synonyms=CABP1A;
                                                                                                                                                                                                                                                                    TaxID=44689;
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IsoId=Pi9198-1; Sequence=Displayed
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CABP1A/CABP1B (CABP1 p
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SUSHI 2.
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5AODO4AB4B841424 CRC64;
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                  Named isoforms=2
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(CABP1 pro
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RESULT 32
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AC Q8ZD
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Best Local :
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BTUC_YERPE
Q8ZDX4;
28-FEB-2003
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InterPro; IPR003325; TerD.
InterPro; IPR00031; XYPPX.
Pfam; PF02342; TerD; 1.
Pfam; PF02162; XYPPX; 4.
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                                                                                                                                                                                                                                                                                             Vitamin B12 transport sys
BTUC OR YPO2425 OR Y1914
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EMBL; X52688; CAB36633.1; -.
EMBL; M36176; AAA33173.1; -.
EMBL; X55975; CAA39445.1; -.
STRAIN=CO-92 / Biovar Orientalis;

MEDLINE=21470413; PubMed=11586360;

Parkhill J., Wren B.W., Thomson N.R., Ti

Prentice M.B., Sebaihia M., James K.D.,
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                                                                                                                                                                                                                                      Yersinia pestis.
Bacteria; Proteobacteria;
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PIR; S13497; S13497.
                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                         CBI_TaxID=632;
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soId=P19198-2; Sequen
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Missing (in isoform 2).
/FTId=VSP_000758.
MISSING (IN VARIANT V12M2)
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CKAF -> GMQGA (IN VARIANT V12M2).
9A274606139E0EC1 CRC64;
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5 AA REPEATS OF MOTIF
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Titball R.W., ., Churcher C.,
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RESULT 33
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AC 15-JUL
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Q62394; 15-JUL-1999 15-JUL-1999 30-MAY-2000

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protein 185 (LIM-domain pr

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HAMAP; MF_01004; -; 1
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3EQUENCE FROM N.A.
STRAIN=KIM5 / Biovar Mediaevalis;
MEDLINB=22137863; PubMed=12142430;
Deng W., Burland V., Plunkett G. III, Boutin A., Mayhew '
Deng W., Rose D.J., Mau B., Zhou S., Schwartz D.C.,
Perna N.T., Rose D.J., Mau B., Zhou S., Schwartz D.C.,
Fetherston J.D., Lindler L.E., Brubaker R.R., Plano G.V.
Fetherston J.D., McDonough K.A., Nilles M.L., Matson J.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Baker S., Basham D., Bentley S.D., Brooks K., Cerdeno-Tarraga A.M., Chillingworth T., Cronin A., Davies R.M., Davis P., Dougan G., Reltwell T., Hamlin N., Holroyd S., Jagels K., Karlyshev A.V., Leather S., Moule S., Oyston P.C.F., Quail M., Rutherford K., Simmonds M., Skelton J., Stevens K., Whitehead S., Barrell B.G.; "Genome sequence of Yersinia pestis, the causative agent of plague.";
                                                                                                                                                                                                                                   ProDom; PD001557; FecCD; 1.
PROSITE; PS00402; BPD_TRANSP_INN_MEMBR; FALSE_NEG.
Transport; Cobalt transport; Transmembrane; Inner
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EMBL; AE013794;
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J. Bacteriol. 184:4601-4611(2002).
-i- FUNCTION: Part of the binding-protein-dependent
for vitamin B12. Involved in the translocation o
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AAM85481.1;
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RESULT 34
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STRAIN=SCRI193;
Golby P., Jones
Stewart G., Will
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Q47417;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contentities requires a license agreement (See http://www.isb-sib.ch/ar
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                                                                                                                                                    01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00478; LIM_DOMAIN_1; FALSE_NEG PROSITE; PS50023; LIM_DOMAIN_2; 1.
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                                                                                           Bacteria; Proteobacteria; Gammaproteobacteria; Enterobacteriaceae; Pectobacterium.
                                                                                                                      Erwinia carotovora
                                                                                                                                    Exoenzyme regulation regulon ORF1.
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                                               SEQUENCE FROM N.A.
                                                                                          Enterobacteriaceae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MGD; MGI:108095; Zfp185.
InterPro; IPR001781; LIM.
                                                                       NCBI_TaxID=554;
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SUBCELLULAR LOCATION: NUCLEAR (POTENTIAL).

TISSUE SPECIFICITY: EXPRESSED IN SKIN, KIDNEY, OVARY, TESTIS. ALS EXPRESSED IN SKIN, KIDNEY, OVARY, TESTIS. ALS EXPRESSED IN SKIN, KIDNEY, OVARY, TESTIS. ALS EXPRESSED IN SKIN, KIDNEY, OVARY, TESTIS. AND EXPRESSED ALSO IN CELLS LINING THE VERTEBRAE AND TENDONS OF THE PROXIMAL TAIL. IN LATE EMBRYOGENESIS, EXPRESSED IN MESENCHYMAL CELLS ADJACENT TO THE DISTRAL LIMB BONES (TIBIA AND CALCANEUM), IN TENDONS AND IN THE CONNECTIVE TISSUE SHEATH (EPIMYSIUM) SURROUNDING THE SKELETAL MUSCLE. ALSO EXPRESSED IN THE EPIMYSIUM) SURROUNDING THE SKELETAL MUSCLE. ALSO EXPRESSED IN THE EPITIELIA OF THE EPIDIDYMLS OF THE TESTIS.
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   Jones S.E.,
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352 AA;
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   Stephens S.,
o., Salmond G.
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   Reeves
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                 P.J.,
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Q9R7D7; Q97521;
16-OCT-2001 (Rel. 40, Create
16-OCT-2001 (Rel. 40, Last s
28-FEB-2003 (Rel. 41, Last a
Galactokinase (EC. 2.7.1.6) (
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Submitted (MAX-1994) to the EMBL/GenB:
SIMILARITY: BELONGS TO THE RLU FAI
STRONG, TO E.COLI YQCB.
-!- SIMILARITY: IN THE N-TERMINAL, STI
TERMINAL, STRONG, TO E.COLI YQCB.
Vaughan E.E., Pridmore R.D., Mollet B.;
"Transcriptional regulation and evolution of lactose genes
galactose-lactose operon of Lactococcus lactis NCDO2054.";
J. Bacteriol. 180:4893-4902(1998).
                                                                                                                                                                                           MEDIINE=21235186; PubMed=11337471;
Bolotin A., Wincker P., Mauger S., Jaillon O., Malarme K.,
Weissenbach J., Ehrlich S.D., Sorokin A.;
"The complete genome sequence of the lactic acid bacterium Lactococcus
lactis ssp. lactis IL1403.";
Genome Res. 11:731-753(2001).
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Pfam; PF00849; PseudoU synth 2;
ProDom; PD001819; PSI_RLU; 1.
PROSITE; PS01129; PSI_RLU; 1.
SEQUENCE 376 AA; 43605 MW; I
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                                                                                                STRAIN=NCDO 2054;
MEDLINE=98406043;
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STRAIN=ATCC 7962;
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Bacteria; Firmicutes;
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InterPro; IPR006224; PSI_RLU.
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annotation update)
(Galactose kinase)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lee W.K.,
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RESULT 36
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InterPro; IPR000705; Galactokinase.

InterPro; IPR000705; Galactokinase.

InterPro; IPR0006204; GHMP kinase.

InterPro; IPR006204; GHMP kinase.

InterPro; IPR006203; GHMPknse ATP.

InterPro; IPR006203; GHMPknse Si.

PFINTS; PF00288; GHMP kinases; 1.

PRINTS; PR009473; GALCTOKINASE.

PRINTS; PR00967; LMEPPROTEIN.

PRINTS; PR00959; MEVGALKINASE.

TIGREAMS; TIGR00131; gal kin; 1.

PROSITE; PS00106; GALACTOKINASE; 1.

PROSITE; PS00106; GALACTOKINASE; 1.

PROSITE; PS00106; GALACTOKINASE; 1.

TRANSFERSE; Kinase; Galactose metabolism; AT
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q95652;
Q95652;
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation updat
Calactokinase (EC 2.7.1.6) (Galactose kinas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LACLC
                                                                                                                                                                                                                                    STRAINAMG1363;
Grossiord B.P., Luesink E.J.,
"Characterization, expression
galamKTE genes involved in gal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                           Submitted (SEP-1998) to -!- CATALYTIC ACTIVITY:
                                                                                                                                                                                                                                                                                                                                                                                               NCBI_
                                                                                                                                                                                                                                                                                                                                                                                                                  Lactococcus lactis (subsp. cremoris) (
Bacteria, Firmicutes; Lactobacillales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
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NP_BIND 131
CONFLICT 290
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                                                                                                                                                                                                                                                                                                                                                 EQUENCE FROM N.A.
                                                   PATHWAY: Galactose metabolism;
SUBCELLULAR LOCATION: Cytoplasm
SIMILARITY: BELONGS TO THE GHME
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PATHWAY: Galactose metabolism; first step.
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399 AA;
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     copyright.
                                                   Cytoplasmic (Potential).

THE GHMP KINASE FAMILY. GALK SUBFAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                     cremoris) (Streptococcus cremoris).
bbacillales; Streptococcaceae; Lactococcus
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+ D-galactose = AI
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Pred. No
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T -> A (IN REF. 3)
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and mutations of the
lactose utilization
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GHMP KINASE FAMILY. GALK SUBFAMILY.
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                                                                                                                                                             3J databases
ADP + D-gala
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RESULT 37
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Mewes H.-W., Frishman D., St
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"The denome sequence of the
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Q9HJ95;
16-OCT-2001
                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                               Nature 407:508-513(2000).

-!- CATALYTIC ACTIVITY: ATP + 3-phospho-D-glycer phosphate.

-!- PATHMAY: Second phase of glycolysis; second -!- SUBUNIT: Monomer (By similarity).

-!- SUBCELLULAR LOCATION: Cytoplasmic (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE=20479972; PubMed=11029001; MEDLINE=20479972; PubMed=11029001; Koretke K.K., Volker C., Ruepp A., Graml W., Santos-Martinez M.-L., Koretke K.K., Volker C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16-OCT-2001 (Rel.
16-OCT-2001 (Rel.
28-FEB-2003 (Rel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=DSM 1728;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=2303;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Thermoplasmataceae;
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                                                                                                                                                                                                                           SIMILARITY: Belongs to the phosphoglycerate kinase family.
AL445066; P07378; 16
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                       CAC12203.1;
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40, Last sequence update)
41, Last annotation update)
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RESULT 38
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01-MAY-1992 (Rel. 22, Last sequence up
01-MAY-1992 (Rel. 22, Last annotation
46.5 kDa protein (ORF 424).
Bacteriophage Pfl.
                                                             YKK5_STRCO STANDARD; PRT; 430 AA.

QKYSO;

28-FEB-2003 (Rel. 41, Created)

28-FEB-2003 (Rel. 41, Last sequence update)

15-SEP-2003 (Rel. 42, Last annotation update)

Hypothetical zinc metalloprotease SCO5695 (EC 3.4.24.-).

SCO5695 OR SCS44.19.

Streptomyces coelicolor.

Bacteria; Actinobacteria; Actinobacteridae; Actinomycetales;
                                                                                                                                                                                              STRCO
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PRINTS; PR00477; PHGLYCKINASE.
PROSTITE; PS00111; PGLYCERATE_KINASE; FALSE_NEG.
Transferase; Kinase; Glycolysis; Complete prote
SEQUENCE 408 AA; 45372 MW; 6F3C6C2357FD5849
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InterPro; IPR001576; PGK.
                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Viruses; ssDNA viruses; Inoviridae; Inovirus
NCBI_TaxID=10871;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE=91186399; PubMed=2010913; Hill D.F., Short N.J., Perham R.N.,
SEQUENCE FROM N.A.
STRAIN=A3(2) / M145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                    Streptomycineae; Streptomycetaceae; Streptomyces (Streptomyces)
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nes 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     D.F., Short N.J., Perham R.N., Petersen G.B.; sequence of the filamentous bacteriophage Pfl."; ol. Biol. 218:349-364(1991).
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Bentley S.D., Chater K.F., Cerdeno-Tarraga A.-M., Challis G.L.,
Thomson N.R., James K.D., Harris D.E., Quail M.A., Kieser H.,
Harper D., Bateman A., Brown S., Chandra G., Chen C.W., Collins M.,
Cronin A., Fraser A., Goble A., Hidalgo J., Hornsby T., Howarth S.,
Huang C.-H., Kieser T., Larke L., Murphy L., Oliver K., O'Neil S.,
Rabbinowitsch E., Rajandream M.A., Rutherford K., Rutter S.,
Seeger K., Saunders D., Sharp S., Squares R., Squares S., Taylor K.,
Marren T., Wietzorrek A., Woodward J., Barrell B.G., Parkhill J.,
                                                                                                                                                                                                                                                                   MNTH CLC
Q97TN5;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Complete genome sequence of the model actinomycete Streptomyces coellcolor A3(2).";
Nature 417:141-147(2002).
-!- COFACTOR: Zinc (Probable).
-!- SUBCELLULAR LOCATION: Integral membrane protein (Potential).
-!- SIMILARITY: BELONGS TO PERTIDASE FAMILY M50B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PROSITE; PS50106; PDZ; FALSE NEG. PROSITE; PS00142; ZINC_PROTEASE;
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Pfam; PP00595; PDZ; 1.
Pfam; PP02163; Peptidase_M50; 1.
SMART; SM00228; PDZ; 1.
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   STRAIN=ATCC 824 / DSM 792 / VKM B-1787; MEDLINE=21359325; PubMed=11466286; Noelling J., Breton G., OmelChenko M.V.
                                                                                                                                                                                                                28-FEB-2003 (Rel.
28-FEB-2003 (Rel.
28-FEB-2003 (Rel.
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Hypothetical protein; Hydrolase; Metalloprotease; Zinc; Transmembrane;
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or send an email to license@isb-sib.ch).
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                                                     SEQUENCE FROM N.A.
                                                                                                         Clostridium.
                                                                                                                                            Plasmid pSOL1
                                                                                                                                                              Clostridium acetobutylicum
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 Noelling
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     Omelchenko M.V.,
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ZINC (CATALYTIC)
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     Makarova K.S.,
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Tatusov R.L., Sabathe F., Doucette-Stamm L., Soucaille P., Daly M.J.,
Bennett G.N., Koonin E.V., Smith D.R.;
"Genome sequence and comparative analysis of the solvent-producing
bacterium Clostridium acetobutylicum.";
J. Bacteriol. 183:4823-4838(2001).
-I- FUNCTION: H(+)-stimulated, highly selective, manganese uptake
                                                                                                                                                                                                                                                                                                                                                                                                                      the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -

    -!- SUBCELLULAR LOCATION: Integral membrane protein (Probable).
    -!- SIMILARITY: BELONGS TO THE NRAMP FAMILY.

                                                                                                                                                                                                                                                                                                fransport; Symport; Manganese; Transmembrane; Plasmid;
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SUBCELLULAR LOCATION: I
315 ASGLSSS 321
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_6/ptodata/2/pubpaa/US06_PUBCOMB.pep:*
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_6/ptodata/2/pubpaa/US09A_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   6/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
6/ptodata/2/pubpaa/PCTUS_PUBCOMB.pep:
6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6/ptodata/2/pubpaa/US10_NEW_PUB.pep:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          _6/ptodata/2/pubpaa/US09B_PUBCOMB.pep:*
_6/ptodata/2/pubpaa/US09C_PUBCOMB.pep:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               6/ptodata/2/pubpaa/US60_PUBCOMB.pep:*
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                                        0 US-09-769-508-2

0 US-09-854-356-1

0 US-09-930-125-2

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US-09-925-299-847
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US-09-949-039-66
US-10-146-473-72
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Sequence 2, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 6, Appli
Sequence 2, Appli
Sequence 45, Appl
Sequence 847, App
Sequence 847, App
Sequence 6387, App
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Sequence 1, Appli
Sequence 66, Appl
Sequence 72, Appl
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45	44	43	42	41	40	39	38	37	36	35	3. <b>4</b>	ω u	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
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-10-227-873-23	US-10-218-849-236	0-216-159A-2	-10-230-414-23	0-21	-10-230-338-23	w	27-884-23	16-163-23	-893-6	US-09-859-053-32	-10-144-	-09-854-133-43	-09-738-973-4	-10-175-902-	-10-226-318-	-10-226-29	-10-039-785-	-10-322-673-	-10-280-047-	2-383-	-09-992-964-	87-879-1	9-859-053-	-10-177-293-1	22-892-	-10-338-	07-498-	-09-811-1	1
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US-10-271-145-2
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                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Apple Macintosh Microsoft Word SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 2, Application US/10271145
Publication No. US20030138450A1
                                                                                                                                                                    Matches
                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Lanar, David E.
APPLICANT: Dutta, Sheetij
APPLICANT: Ware, Lisa A.
APPLICANT: Ware, Lisa A.
APPLICANT: Wair, Lalitha P. V.
TITLE OF INVENTION: Plasmodium falciparum AMA-1 Protein and Uses Thereof
ETLE REFERENCE: 003/255/SAP
CURRENT FILING DATE: 2002-10-15
PRIOR APPLICATION NUMBER: US/10/271,145
CURRENT FILING DATE: 2002-10-15
PRIOR APPLICATION NUMBER: 10/105,717
PRIOR FILING DATE: 2002-03-25
PRIOR FILING DATE: 2002-03-25
                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS: 5
                                                                                                                                                                                                                                                                                            ORGANISM: Artificial sequence FEATURE:
                                                                                                                                                                                                                                                                                                                                       TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                           LENGTH:
                                     101 PDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRISPFPME----LLEKNSN 156
                                                                                  43
                                                                                                        41 GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
                                                                                                                                                                                                                                                                                                                                                               478
SN----TTFLTPVATGNQYLKD-----GGFAF---PPTEPLMSPMTLDEMRHFYKDNKY 143
                                                                                GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                                                                    Conservative
                                                                                                                                                       13.8%; 5--
27.0%; Pred
170 71;
                                                                                                                                                                                      Score 404; DB 12;
Pred. No. 6.3e-30;
                                                                                                                                                                    Mismatches 163;
                                                                                                                                                                                                        Length 478;
                                                                                                                                                                Indels 98;
                                                                                                                                                                  Gaps
                                                                                96
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APPLICANT: Lanar, David E.
APPLICANT: Mare, Lisa A.
APPLICANT: Ware, Lisa A.
APPLICANT: Ware, Lisa A.
APPLICANT: Ware, Lisa A.
ITILE OF INVENTION: plasmodium falciparum AMA-1 Protein and Uses Thereof PILE REFERENCE: 003/246/SAP
CURRENT APPLICATION NUMBER: US/10/105,717
CURRENT APPLICATION NUMBER: US 60/278,616
PRIOR APPLICATION NUMBER: US 60/278,616
PRIOR FILING DATE: 2001-03-26
INVMBER: OF SEQ ID NOS: 5
SOFTWARE: Apple Macintosh Microsoft Word 6.0
SEQ ID NO 2
LENGTH: 478
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 2
US-10-105-717-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2, Application US/10105717 Publication No. US20030032787A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                     Best Local Sim
Matches 123;
                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURE:
OTHER INFORMATION: Expressed partial sequence of Plasmodium
:-10-105-717-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Artificial sequence
                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      310
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                                                                                                                                                                                                                                                                                                       GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MIKSAFKPTGAFKADRYKSHGKGYNWGNYNTETQ---KCEIFNVKPTCLINNSSYIATTA
                                                                                                                                                                    IKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSV
                                                                                                                                                                                                                                                                                GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LSHPIEVENNF--PCSLYKDEIMKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AGSLSEETPNFIIPSN------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CLDYTELTD-TVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KDESKRNSMFCFRPAKDISFONY----TYLSKNVVDNWEKVCPRKNLONAKFGLWVDGN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKGR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                IKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSV
CLDYTELTD-TVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP-----
                                                                                                                                 VKNLDELTLCSRHAGNMI - - PDNDKNSNYKYPAVYDDKDKKCHILYIAAQENNGPRYCN-
                                                                                                                                                                                                        SN----TTFLTPVATGNQYLKD----GGFAF---PPTEPLMSPMTLDEMRHFYKDNKY
                                                         KDESKRNSMFCFRPAKDISFQNY-----TYLSKNVVDNWEKVCPRKNLQNAKFGLWVDGN
                                                                                            KGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKGR
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                                                                                                                                                                                                                                                                                                                                                                          13.8%;
27.0%;
                                                                                                                                                                                                                                                                                                                                                   71;
                                                                                                                                                                                                                                                                                                                                                                        Score 404; DB 15;
Pred. No. 6.3e-30;
                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                           163;
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CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2001-204089
PRIOR FILING DATE: 2001-05-30
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 8993
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; ORGANISM: Streptomyces
US-10-156-761-8993
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APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: HORIKAWA, HIROS
APPLICANT: SHIBA, TADAYOSH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SAKAKI, YOSHIYUKI
APPLICANT: HATTORI, MASHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ENGTH: 549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CEDIPHVNEFPAIDLFE----CNKLVFELS--ASDQPKQYEQHLTDYEKIKEGFKNKNAS
                                          CLVSDSAA 372
                                                                                                                                                                                                                                                                                                                                          QRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHI
                                                                                                                                                                                                                                                                                                                                                                              LSFRTDVLKKHGLDLPTTWDQVYDVLKALKAAYPDVYPFSDRWGQPTPGGALLNYLGPA-
                                                                                                                                                                                                                                                                                                                                                                                                                                                      FRAKVE-----KWGLEGDLDSIRQADGNYYVLP-----GLHEKVKSGYS
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ISHIKAWA, JUN
HORIKAWA, HIROSHI
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         YMGSDPSA 429
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                                                                                 ----FVAMMQFVDWLW-
                                                                                                               PHTYPLTSQASWNDW-WPLHQSDQPHSGGVGRNYGFYYVD----TTGEGKCALSDQVPD
                                                                                                                                                      PQELVQNYRYNLGKQVKGATIEMIPVPIGPTGEVIVGSRLENGLMVAGRAAEGDS-----
                                                                                                                                                                                         PNQALRGYRFGVWK--KGRCLDYTEL----TDTVI--ERVESKAQCWVKTFENDGVASDQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3.9%;
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Pred. No. 0.066;
7; Mismatches 1
                                                                                 YSDG-GOEFAKYGVEGVTYTSSGAGRYKVADGI-S
                                                                                                                                                                                                                               ---AVRK--
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; TYPE: PRT
; CRGANISM: Homo sapiens
; PEATURE:
; PAME/KEY: misc feature
; OTHER INFORMATION: Incyte ID No. US20030082573A1 604004550CD1
US-10-124-436-1
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US-10-124-436-1
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CURRENT FILING DATE: 2002-04-15
PRIOR APPLICATION NUMBER: US01/26682
PRIOR FILING DATE: 2001-08-27
NUMBER OF SEQ ID NOS: 12
SOFTWARE: PERL Program
SEQ ID NO 1
LENGTH: 782
Sequence 66, Application US/09949039 Publication No. US20030166160A1
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APPLICANT: Yue, H
APPLICANT: Thanga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Streeter, David G.
TITLE OF INVENTION: CELL CYCLE PROTEIN
FILE REFERENCE: PV-0005 CIP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33 VTPQKHAELPPNPCTPDTFKSPLNFSTVTVEQLGITP-ESFVRNSAGKSSSYLKKCRRRS
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                                                                                                                                            WDEA 523
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                                                                                                                                                                                                                                                 PDVRSPATPACRRDLPTPKTFVLRSVLKKPSVKMCLESLQEHCNNLYDDDGTHPSLISNL
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APPLICANT: Scanlan, Matthew APPLICANT: Gout, Ivan APPLICANT: Stockert, Elisabe APPLICANT: Gure, Ali APPLICANT: Chen, Yao-Tseng

Stockert, Elisabeth Gure, Ali

APPLICANT: Chen, Yao-Tseng
APPLICANT: Old, Lloyd
TITLE OP INVENTION: Breast Cancer
FILE REFERENCE: L00461/70130(JRV)

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Sequence 72, Application US/10146473 Publication No. US20030108888A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: HAWLEY, STEPHEN B.
APPLICANT: HAWLEY, STEPHEN B.
TITLE OF INVENTION: COMPOUNDS AND MOLECULAR COMPLEXES COMPRISING MULTIPLE
TITLE OF INVENTION: BINDING REGIONS DIRECTED TO TRANSCYTOTIC LIGANDS
FILE REFERENCE: 057220/1301
CURRENT FILING DATE: 2001-09-06
CURRENT FILING DATE: 2001-09-06
NUMBER OF SEQ ID NOS: 114
SOFTWARE: PATENTIN Ver. 2.1
SEQ ID NO 66
LENGTH: 758
TYPE: PRT
ORGANISM: SUB SCIOFA
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Best Local Similarity
Matches 105; Conserv
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                                                                                                                                                504 QDEGQSQA-FVNCDKKSQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                218 YICQAGDEESSADLQVLKPEPELIYEDLRGSVTFDCALGQEMANVAKFLCQLKNGKT----
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                                                                                                                                                                                                                                                                                                                                                                                               ETNSLKYWCRWEENENGRCPQLVESSGLVNEQYEGR----LALYEEPGNGTFTVILNQLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HPDGEPKEGWPVQAWQLFINEDTMIPPRSSVVRG--VVGGSVAV-----TCPYNPK 371
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ANT, SUSAN G.

LALICANT: LANGTON, BEATRICE CLAUDIA
APPLICANT: HANGOCK, MIRIAM E.C.
APPLICANT: CHAO, LORRINE A.
APPLICANT: BLUFORD, PETER
ITILE OF INVENTION: C-ERBB-2 EXTERNAL DOWAIN: GP75
FILE REFERENCE: BEBIO-111-C1
CURRENT APPLICATION NUMBER: US/09/769,508
CURRENT FILING DATE: 2001-01-26
NUMBER OF SEQ ID NOS: 2
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 2
LENGTH: 1255
TYPE: PRT
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-146-473-72
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CURRENT FILING DATE: 2002-05-15
PRIOR APPLICATION NUMBER: US 60/291,150
PRIOR FILING DATE: 2001-05-15
NUMBER OF SEQ ID NOS: 82
SOFTWARE: PATENTIN VERSION 3.0
SEQ ID NO 72
SEQ ID NO 72
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$\frac{1}{3}; Pred. No. 2.2; |
43; Mismatches 174;
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APPLICANT: Cheever, Martin A.
APPLICANT: Gheysen, Dirk
APPLICANT: Gheysen, Dirk
APPLICANT: Gheysen, Dirk
APPLICANT: Corixa Corporation
APPLICANT: SmithKline Beecham Biologicals S. A.
TITLE OF INVENTION: HER-2/neu Fusion Proteins
FILE REFERENCE: 014058-009810PC
CURRENT APPLICATION NUMBER: US/09/854,356
CURRENT FILING DATE: 2001-05-09
PRIOR APPLICATION NUMBER: US 09/493,480
PRIOR FILING DATE: 2000-01-28
PRIOR APPLICATION NUMBER: US 60/117,976
PRIOR FILING DATE: 1999-01-29
NUMBER OF SEQ ID NOS: 26
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 1
LENGTH: 1255
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Best Local Similarity
Matches 107; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application US/09854356 Patent No. US20020177567A1
                                                     FEATURE:
OTHER INFORMATION: human
NAME/KEY: DOMAIN
                   LOCATION: (1)..(653)
OTHER INFORMATION: extracellular domain (ECD)
                                                                                                                   ORGANISM: Homo sapiens
NAME/KEY:
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22.2%; Pred. No. 2.
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                                                                                                                                                                                                                                                                                                                               Sequence 2, Application US/09930125 Publication No. US20020193329A1 GENERAL INFORMATION:
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LOCATION: (990)..(1048)
OTHER INFORMATION: fragment of the phosphorylation
OTHER INFORMATION: portion (delta PD)
-09-854-356-1
               CURRENT APPLICATION NUMBER: US/09/930,125
CURRENT FILING DATE: 2001-08-14
NUMBER OF SEQ ID NOS: 25
SOFTWARE: FRANCSEQ for Windows Version 3.0
SEQ ID NO 2
                                                                                                                                                                                                                                                                APPLICANT: Hand-Zimmerman, Susan APPLICANT: Cheever, Martin A. APPLICANT: Foy, Teresa M.
                                                                                                                    APPLICANT: McNeill, Patricia D.
APPLICANT: Vedvick, Thomas S.
TITLE OF INVENTION: COMPOSITIONS AND METHDOS
TITLE OF INVENTION: OF HER-2/NEU-ASSOCIATED
FILE REFERENCE: 210121.544
                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: intracellular domain (ICD)
NAME/KEY: DOMAIN
LOCATION: (990)..(1255)
OTHER INFORMATION: phosphorylation domain (PD)
LENGTH: 1255
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                G 668
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PDEEGAC--QPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVVL
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                                                                                                                                                                                                                          Lodes, Michael J.
Kalos, Michael D.
                                                                                                                                          FOR THE THERAPY AND MALIGNANCIES
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                                                                                                                                                                 DIAGNOSIS
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; Sequence 6, Application US/09441411
publication No. US2003008342A1
; GENERAL INFORMATION:
APPLICANT: Scholler, Nathalie B.
APPLICANT: Disis, Mary L.
; APPLICANT: Hellstrom, Ingegerd
APPLICANT: Hellstrom, Karl Erik
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                                                                                                                                       ; TYPE: PRT; ORGANISM: Homo sapiens US-09-441-411-6
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US-09-441-411-6
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; ORGANISM: H
US-09-930-125-2
                                                                                                                                                                                                                  SOFTWARE: I
                                                                      Matches
                                                                                      Query Match
Best Local
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                                                                                                                                                                                                                                                        NUMBER OF SEQ ID NOS:
                                                                                                                                                                                                                                                                        FILE REFERENCE: 730033.409
CURRENT APPLICATION NUMBER: US/09/441,411
CURRENT FILING DATE: 1999-11-16
                                                                                                                                                                                                                                                                                                                             APPLICANT: Hellstrom, Ingegerd
APPLICANT: Hellstrom, Karl Erik
TITLE OF INVENTION: SURFACE RECEPTOR ANTIGEN VACCINES
                                                                                                                                                                                                 LENGTH: 1255
                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    458
256 LHFNHSGIC-----ELHCPALVTYNTDTFESMPN----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             298 AC-----PYNYL-----STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
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                                81 LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT 137
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                                                                                                                                                                                                                                   FastSEQ for Windows Version 4.0
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ilarity 22.5%;
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                                                                  Score 104; DB 11;
Pred. No. 2.2;
43; Mismatches 174;
                                                                                                       Length 1255;
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                                                                    Indels 156;
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FILE REFERENCE: 210121.483C3
CURRENT APPLICATION NUMBER: US/10/313,644
CURRENT FILING DATE: 2002-12-04
NUMBER OF SEQ ID NOS: 5
SOFTWARE: FASTSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 1255
TYPE: PRT
ORGANISM: Homo sapien
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US-10-313-644-2
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                                                                                                                                                                                                                                            Query Match
Best Local Similarity
                                                                                                                                                                                                                              Matches 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Gaiger, Alexander
APPLICANT: Cheever, Martin A.
APPLICANT: Hand-Zimmerman, Susan
TITLE OF INVENTION: METHODS FOR DIAGNOSIS
TITLE OF INVENTION: AND VIRUS-ASSOCIATED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      233
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                                                                                                                                     138 PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS
                                                                                                                                                                                             81 LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G 668
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LDYTELTDTVIERVESKAQCWVKTFENDGVASDQ----PHTYPLTSQASWNDWWPLHQSD 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
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SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----
                                                                                                                                                                  LHFNHSGIC-----ELHCPALVTYNTDTFESMPN-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDEEGAC--QPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVL
                                              --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
                                                                            KKRLCH----
                                                                                                          AC-----PYNYL----STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                            3.6%;
                                                                           ---ILYVSMQLMEGKKYC---
                                                                                                                                                                                                                            ; Score 104; DB 12;
; Pred. No. 2.2;
43; Mismatches 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                        AND THERAPY OF HEMATOLOGICAL MALIGNANCIES
                                                                                                                                                                                                                                                             Length 1255;
                                                                                                                                                                                                                                 Indels
                                                                            -SVKGEPPDLTWYCFKPRK
                    -----YRFGV-WKKGRC
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; TYPE: PRT
; ORGANISM: HOMO 6
US-10-207-655-45
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US-10-207-655-45
; Sequence 45, Application US/10207655
; Publication No. US20030118592A1
; GENERAL INFORMATION:
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Best Local Similarity
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                                  380 SLSEETPNFIIPSNPSVTPPTPETALQCTAD------KF 412
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      HCLPCHPE-COPONGSVTCFGPE-ADOCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                 RPEDECVGEGLACHOLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
                                                                                                                                                      LDYTELTDTVIERVESKAQCWVKTFENDGVASDQ----PHTYPLTSQASWNDWWPLHQSD 332
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                                                                                            QPHSGGVGRNYGFYYVDTTGE-----GKCALSDQ-----VPDCLVSDSAAVSYTAAG 379
                                                                                                                           L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH-----QAL-----LHTAN
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398 QVFETLEEITGYLYISAWÞDSLÞDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS 457
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                                                          PDSFGACDVQACKROKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL 472
                                                                                                                                   HCLPCHPE-COPONGSVTCFGPE-ADOCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                                                                                                                                                  SLSEETPNFIIPSNPSVTPPTPETALQCTAD-----
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QPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIIS--AVVGILLVVVL
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          667
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APPLICANT: Ledbetter, Jeffrey A.
APPLICANT: Hayden-Ledbetter, Martha S.
TITLE OF INVENTION: BINDING DOMAIN-IMMUNOGLOBULIN
FILE REFERENCE: 390069.401C1
CURRENT APPLICATION NUMBER: US/10/207,655
CURRENT FILING DATE: .2002-07-25
NUMBER OF SEQ ID NOS: 426 FUSION

457

498

616

193

LHFNHSGIC-----ELHCPALVTYNTDTFESMPN-----PEGRYTFGASCVT LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG----FNLNFVT Score 104; DB Pred. No. 2.2; 43; Mismatches DB 15; 174; Length 1255; Indels 156; PROTEINS Gaps 137 297 27

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CURRENT APPLICATION NUMBER: US/09/925,299
CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05883
PRIOR FILING DATE: 2000-03-08
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR APPLICATION NUMBER: 60/124,270
PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1556
SOFTWARE: PACENTIN Ver. 2.0
SEQ ID NO 847
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                                  US-09-925-299-847
                                                     RESULT 14
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US-09-925-299-847
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Best Local S
Sequence 847, A Publication No.
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TITLE OF INVENTION: Nucleic Acids, Proteins
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Similarity 19.7%; Pred. No. 0.36;
93; Conservative 48; Mismatches
                                                                                                                                            VLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRP---SDLMQEA 515
                                                                                                                                                                                ---DEVSGOLILTNLSLTSSGTYRCVATNOMGSASCELTLSVTEPSQGRVAGALIGVLLG
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Application US/09925299
o. US20030040617A9
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RESULT 15
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US-09-925-299-847
Sequence 6387, Application US/10106698
Publication No. US20030109690A1
GENERAL INFORMATION:
APPLICANT: Ruben et al.
TITLE OF INVENTION: Colon and Colon Cancer Associated Polynucleotides and Polypeptide
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PRIOR FILING DATE: 1999-03-12
NUMBER OF SEQ ID NOS: 1556
SOFTWARE: PatentIn Ver. 2.0
SEQ ID NO 847
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CURRENT FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05883
PRIOR FILING DATE: 2000-03-08
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TITLE OF INVENTION: Nucleic Acids, Proteins
FILE REFERENCE: PA102
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Local Similarity 19.7%;
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Pred. No. 0.36;
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FILE REFERENCE: PA005P1
CURRENT APPLICATION NUMBER: US/10/106,698
CURRENT FILING DATE: 2002-03-27
PRIOR APPLICATION NUMBER: PCT/US00/26524
PRIOR FILING DATE: 2000-09-28
PRIOR APPLICATION NUMBER: US 60/157,137
PRIOR FILING DATE: 1999-09-29
PRIOR FILING DATE: 1999-09-29
PRIOR FILING DATE: 1999-09-29
PRIOR FILING DATE: 1999-11-03

SOFTWARE: PatentIn Ver.

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GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: Sharon Erickeon

APPLICANT: Ralph Schwall

APPLICANT: Mark Sliwkowski

TITLE OF INVENTION: METHODS OF TREATMENT USING ANTI-ErbB

TITLE OF INVENTION: ANTIBODY MAYTANSINOID CONJUGATES

FILE REFERENCE: GENENT.073A2

CURRENT APPLICATION NUMBER: US/09/811,123

CURRENT FILING DATE: 2001-03-16

PRIOR APPLICATION NUMBER: 60/238,327

PRIOR APPLICATION NUMBER: 09/602,530

PRIOR APPLICATION NUMBER: 09/602,530

PRIOR APPLICATION NUMBER: 09/602,530

PRIOR APPLICATION NUMBER: 09/602,530
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; LENGTH: 365
; TYPE: PRT
; ORGANISM: HOMO E
; ORGANISM: 698-6387
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US-09-811-123-9
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                                                                                                                  ; TYPE: PRT
; ORGANISM: Homo mapiens
US-09-811-123-9
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                                     Query Match
Best Local Similarity
Matches 107; Conserv
                                                                                                                                                                                         SOFTWARE: FastSEQ for Windows Version SEQ ID NO 9
                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS:
                                                                                                                                                                         LENGTH: 1255
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Local Similarity 19.7%; Pred. No. 0.36;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      101 PDRLPYRNNFLEDVPTEKE----YKQSGNP-----LPG----GFNLNFVTPSGQRIS-P 145
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 81 LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT 137
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                                         Conservative
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                                         44;
                                                           Score 103; DB 9; Pred. No. 2.7;
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                                         Mismatches 174;
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                                                                          Length 1255;
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                                         Indels 156;
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APPLICANT: King, Kathlein
APPLICANT: King, Kathlein
TITLE OF INVENTION: HER-2 TRANSGENIC NON-HUMAN TUI
FILE REFERENCE: GENENT.034A
CURRENT APPLICATION NUMBER: US/09/811,115
CURRENT FILING DATE: 2001-03-16
PRIOR APPLICATION NUMBER: 60/189,844
PRIOR APPLICATION NUMBER: 60/189,844
PRIOR FILING DATE: 2000-03-16
NUMBER OF SEQ ID NOS: 4
SOFTWARE: FastSEQ for Windows Version 4.0
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Best Local S
Matches 107
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LENGTH: 1255
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Patent No. US20020035736A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
                                                                                                                                                                                                                                                                                                                                              ORGANISM: Homo sapiens
                                                                                                                                                                                                                                              Local Similarity
les 107; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              233 SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG------YRFGV-WKKGRC 276
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        340 --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
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340 --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL 397
                                        194 KKRLCH-----
                                                                                                                                                                                                 81 LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT 137
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH------QAL-----LHTAN 498
                                                                                  AC----PYNYL--
                                                                                                                     PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS 193
                                                                                                                                                              LHFNHSGIC-----ELHCPALVTYNTDTFESMPN----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PDEEGAC--QPC---PINCTHSCVDLDDKGCPAEQR--ASPLTSIVS--AVVGILLVVVL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL
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                                                                                                                                                                                                                                         3.5%; Score 103; DB ilarity 22.2%; Pred. No. 2.7; Conservative 44; Mismatches
                                        ILYVSMQLMEGKKYC-----SVKGEPPDLTWYCFKPRK 232
                                                                                -STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
                                                                                                                                                                                                                                                                                   DB 9; Length 1255;
                                                                                                                                                                                                                                                174;
                                                                                                                                                                                                                                                Indels 156;
                                                                                                                                                                  -----PEGRYTFGASCVT
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PRIOR APPLICATION NUMBER: 60/308,431
PRIOR FILING DATE: 2001-07-27
NUMBER OF SEQ ID NOS: 24
SOFTWARE: FASTSEQ for Windows Version 4.
SEQ ID NO 6
SEQ ID NO 6
LENGTH: 1255
TYPE: PRT
ORGANISM: Homo sapiens
US-10-207-498-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Blizabeth Singer
APPLICANT: Ralf Landgraf
APPLICANT: Dennis J. Slamon
APPLICANT: Dennis J. Slamon
APPLICANT: David Eisenberg
APPLICATION: METHODS AND MATERIALS FOR CHARACTERIZING
TITLE OF INVENTION: AND MODULATING INTERACTIONS BETWEEN HEREGULIN AND HER3
FILE REFERENCE: 30448.103-US-U1
CURRENT APPLICATION NUMBER: US/10/207,498
CURRENT FILING DATE: 2002-07-29
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                                                                                OVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
                                                                                                                      SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC
                                                                                                                                                               --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL 397
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APPLICANT: Nicolette, Charles A.
APPLICANT: Nicolette, Charles A.
TITLE DE INVENTION: THERAPEUTIC COMPOUNDS
FILE REFERENCE: 5017C
CURRENT FILING DATE: 2003-01-08
PRIOR APPLICATION NUMBER: US 09/527,487
PRIOR APPLICATION NUMBER: US 09/527,487
PRIOR FILING DATE: 2002-03-16
NUMBER OF SEQ ID NOS: 10
SOFTWARE: Patentin version 3.1
SEQ ID NO 2
LENGTH: 1255
TYPE: PRT
ORGANISH: Homo sapiens
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Similarity 22.2%; Pred. No. 2.7;
07; Conservative 44; Mismatches 174; Indels 156
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RESULT 20
US-10-322-892-4
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SEQ ID NO 4
LENGTH: 1255
TYPE: PRT
ORGANISM: Homo sapiens
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Best Local Similarity 22.2%;
Matches 107; Conservative 44
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PRIOR FILING DATE: 2001-12-19
NUMBER OF SEQ ID NOS: 4
SOFTWARE.
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CURRENT FILING DATE: 2002-12-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE OF INVENTION: METHOD AND RELATED COMPOSITION EMPLOYING NANOSTRUCTURES FILE REFERENCE: W07-505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
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                                                                                                                                 PDEEGAC --
                                                                                                                                                                       PDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLLLALL
                                                                                                                                                                                                             HCLPCHPE-CQPQNGSVTCFGPE-ADQCVACAHYKDPPFCVARCPSGVKPDLSYMPIWKF
                                                                                                                                                                                                                                                   SLSEETPNFIIPSNPSVTPPTPETALQCTAD-----
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Pred. No. 2.7;
4; Mismatches 174;
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PRIOR APPLICATION NUMBER: US 60/299,887
PRIOR FILING DATE: 2001-06-21
PRIOR PELICATION NUMBER: US 60/301,572
PRIOR FILING DATE: 2001-06-27
PRIOR APPLICATION NUMBER: US 60/306,501
PRIOR APPLICATION NUMBER: US 60/325,002
PRIOR APPLICATION NUMBER: US 60/325,002
PRIOR FILING DATE: 2001-09-25
PRIOR APPLICATION NUMBER: US 60/362,585
PRIOR APPLICATION NUMBER: US 60/362,585
PRIOR APPLICATION NUMBER: US 60/362,585
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LENGTH: 1255
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Best Local
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CURRENT APPLICATION NUMBER: US/10/177,293
CURRENT FILING DATE: 2002-06-21
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PRIOR APPLICATION NUMBER: US 60/xxx,xxx
PRIOR FILING DATE: 2002-05-14
NUMBER OF SEQ ID NOS: 506
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SOFTWARE: FastSEQ for Windows Version
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE OF INVENTION: COMPOSITIONS, TITLE OF INVENTION: PREVENTION,
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                                                                                                                                                                                                                                                     194 KKRLCH------ILYVSMQLMEGKKYC---
                                                                                                                                                                                                                                                                                                                                                                                                      81 LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT 137
QPHSGGVGRNYGFYYVDTTGE-----GKCALSDQ------VPDCLVSDSAAVSYTAAG 379
                                                         L--RELGSGLALIHHNTHLCFVHT-----VPWDQLFRNPH-----QAL-----LHTAN
                                                                                                                                     QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
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                                                                                             LDYTELTDTVIERVESKAQCWVKTFENDGVASDQ----PHTYPLTSQASWNDWWPLHQSD 332
                                                                                                                                                                         SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG-----YRFGV-WKKGRC
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Kamatkar, S)
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Hortobagyi, Gabriel
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Wang, Youzhen
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Zhao, Xumei
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Meyers, Rachel E.
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Pred. No. 2.7;
44; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  174;
                                                                                                                                                                                                                                                         ----SVKGEPPDLTWYCFKPRK 232
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RESULT 23
US-09-887-879-14
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US-09-859-053-36
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Best Local :
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PRIOR FILING DATE: 2001-03-30
PRIOR PPLICATION NUMBER: JP 2000-147116
PRIOR FILING DATE: 2000-05-18
NUMBER OF SEQ ID NOS: 43
SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE OF INVENTION: HUMAN MONOCLONAL ANTIBODY AGAINST A TITLE OF INVENTION: COSTIMULATORY SIGNAL TRANSDUCTION MOLECULE AILIM TITLE OF INVENTION: PHARMACEUTICAL USE THEREOF FILE REFERENCE: 06501-079001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT:
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CURRENT FILING DATE: 2001-05-16
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                                                                                                                                                                                                                                                    164 --ESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSS--GLYSLSSVVTVPSSN
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3.5%; Score 102; DB 10; Length (
Similarity 22.2%; Pred. No. 0.74;
70; Conservative 34; Mismatches 140; Indels
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                                                                                                     FPPKPKDTLMISRTPE
                                                                                                                                                                                                                                                                                                                               RDKRTVTHEHYYYYGMDVWGQGTTVTVSSASTKGP----SVFPLAPCSRSTS-----
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                                                                                                                                                                            FGTQTYTCNVDHKPSNTKVDKTVERKCCV--ECPPCPAPPVAGPSV
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Hori, No. US20020102658Aluaki
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CURRENT APPLICATION NUMBER: US/09/992,964
CURRENT FILING DATE: 2001-11-19
PRIOR APPLICATION NUMBER: 08/878,168
PRIOR FILING DATE: 1997-06-18
NUMBER OF SEQ ID NOS: 17
SEQ ID NO 14
LENGTH: 418
LENGTH: 418
TYPE: PRT
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                                                                             ; ORGANISM: Homo sapiens
US-09-992-964-14
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; ORGANISM: Homo sapiens US-09-887-879-14.
 Query Match
Best Local Similarity
Matches 59; Conserv
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SEQ ID NO 14
                                                                                                                                                                                                                                                                                                                                                                                                   Patent No. US20020161202A1
                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 14, Application US/09992964
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                                                                                                                                                                                                                                                                   TITLE OF INVENTION: Apo-2DcR FILE REFERENCE: P1110
                                                                                                                                                                                                                                                                                                          APPLICANT:
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CURRENT APPLICATION NUMBER: US/09/887,879
CURRENT FLIING DATE: 2001-06-21
PRIOR APPLICATION NUMBER: 09/096,500
PRIOR FILING DATE: 1998-06-12
PRIOR APPLICATION NUMBER: US 60/049,911
PRIOR APPLICATION NUMBER: US 60/049,911
PRIOR FILING DATE: 1997-06-18
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Wood, William I.
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Chuntharapai, Anan
Gurney, Austin
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Wood, William
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                   24.2%;
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; Score 101.5; D; Pred. No. 0.69; 27; Mismatches
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Pred. No. 0.69;
7; Mismatches
                                     DB 10;
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US-10-242-383-14
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Publication No. US20030138915A1
GENERAL INFORMATION:
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Best Local Similarity
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LENGTH: 418
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CURRENT FILING DATE: 2002-09-11
PRIOR APPLICATION NUMBER: US/09/887,879
PRIOR FILING DATE: 2001-06-21
PRIOR APPLICATION NUMBER: 09/096,500
PRIOR FILING DATE: 1398-06-12
PRIOR FILING DATE: 1398-06-12
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NUMBER OF SEQ ID NOS:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION NUMBER: US 60/049,911
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270
                                                                                                   468 LLALLGGG------CYFAKRLDRNKGVQ-AAHHE-----HEFQSDRGARKKR
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                                                                  210 VCCCIGSGCGGDPKCMDRVCFWRLGLLRGPGAEDNAHNEILSNADSLSTFVSEQQMESQE
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PADL
                                PSDL 511
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Chuntharapai, Anan
Gurney, Austin
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273
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{, William I.
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; Pred. No. 0.69;
27; Mismatches
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; ORGANISM: human
US-10-280-047-6
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US-10-280-047-6
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US-10-322-673-1
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PRIOR FILING DATE: 1997-05-30
PRIOR PEPLICATION NUMBER: 60/144,023
PRIOR FILING DATE: 1999-07-15
PRIOR APPLICATION NUMBER: 60/142,563
PRIOR APPLICATION NUMBER: 60/136,786
PRIOR APPLICATION NUMBER: 60/136,786
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Publication No. US20030180883A1
GENERAL INFORMATION:
APPLICANT: Ni. Jian
APPLICANT: Rosen, Craig A
                                                                                                Sequence 1, Application US/10322673
Publication No. US20030180296A1
GENERAL INFORMATION:
APPLICANT: Salcedo et al.
TITLE OF INVENTION: Antibodies that
TITLE OF INVENTION: Receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 59; Conserv
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CURRENT APPLICATION NUMBER: US/10/280,047
CURRENT FILING DATE: 2002-10-25
FILE REFERENCE: PF585
CURRENT APPLICATION NUMBER: US/10/322,673
CURRENT FILING DATE: 2002-12-19
PRIOR APPLICATION NUMBER: 60/341,237
PRIOR FILING DATE: 2001-12-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Rosen, Craig A
TITLE OF INVENTION: Human Tumor Necrosis Factor Receptor
FILE REFERENCE: PF379PlD1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 1999-05-28 NUMBER OF SEQ ID NOS: 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: 09/086,483
PRIOR FILING DATE: 1998-05-29
PRIOR APPLICATION NUMBER: 60/069,112
PRIOR FILING DATE: 1997-12-09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: 09/580,212 PRIOR FILING DATE: 2000-05-26
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                                                                                                                                                                                                                                                                                                                                                              508
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                                                                                                                                                                                                                                                                                                                      PADL
                                                                                                                                                                                                                                                                                                                                                              PSDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMCRKCSTGCPRGMVKVK--DCTPWSDIECVHKESGNGHNIWVILVVTLVVPLLLVAVLI
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Pred. No. 0.82;
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US-10-039-785-1
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-10-322-673-1
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SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local
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CURRENT FILING DATE: 2002-05-07
                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE OF INVENTION: Antibodies that Immunospecifically Bind TITLE OF INVENTION: Receptors
                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: Salcedo et al.
                                                                                                                                                                                                                                                                                                                                         NI FILING DATE: 2002-05-07
APPLICATION NUMBER: 60/369,860
FILING DATE: 2002-04-05
ADDITORTOR
                                                                                                                                                                                                                            FILING DATE: 2001-11-14
APPLICATION NUMBER: 60/331,044
FILING DATE: 2001-11-07
                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: 60/331,310
                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: 60/341,237 FILING DATE: 2001-12-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FILING DATE: 2002-06-04
APPLICATION NUMBER: 60/396,591
FILING DATE: 2002-07-18
APPLICATION NUMBER: 60/403,370
FILING DATE: 2002-08-15
                                    APPLICATION NUMBER: FILING DATE: 2001-05
                                                                        APPLICATION NUMBER: 60/294,981 FILING DATE: 2001-06-04
                                                                                                                 APPLICATION NUMBER: 60/309,176 FILING DATE: 2001-08-02
                                                                                                                                                                     FILING DATE: 2001-10-09
APPLICATION NUMBER: 60/323,807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/425,737 FILING DATE: 2002-11-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: 60/369,877
FILING DATE: 2002-04-05
APPLICATION NUMBER: 60/384,828
                                                                                                                                                     FILING DATE: 2001-09-21
                                                                                                                                                                                                              APPLICATION NUMBER: 60/327,364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INFORMATION:
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                    SEQ ID NOS:
PatentIn Ver.
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; Pred. No. 0.82
27; Mismatches
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; LENGTH: 468
; TYPE: PAT
; ORGANISM: Homo sapiens or US-10-039-785-1
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US-10-226-296-2
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Best Local Similarity
                                               APPLICATION NUMBER: 09/013,895
FILING DATE: 27-JAN-1998
ATTORNEY/AGENT INFORMATION:
NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,688
REFERENCE/DOCKET NUMBER: 1488.
                                                                                                                                                                                                                                                                                                  COMPUTER REALABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                 TELECOMMUNICATION INFORMATION
                                                                                                                                                                                                         PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
ADDRESSEE: HUMAN G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICANT: Ni, Jian
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 161 LFACL-----PCTACKSDEEE-----RSPCTT--TRNTACQCKPGTFRNDNSA---
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                                                                                                                                                                                                                         APPLICATION NUMBER: US/10/226,296
FILING DATE: 23-Aug-2002
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PSDL 511
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                                                                                                                                                                     APPLICATION NUMBER: US/09/448,868 FILING DATE: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                    STATE: MD
COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PADL 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                          CITY: ROCKVILLE
TELEFAX: (202)371-2540
                 relephone:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INVENTION: Death Domain Containing Receptor 4 (DR4: Death Receptor 4), Member of the TNF-Receptor Superfamily and Binding to Trail (AP02-L)
                                                                                                                                                                                                                                                                                                                                                                                                    20850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gentz, Reiner L.
Dixit, Vishva M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Rosen, Craig A.
Pan, James G.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            9410 KEY WEST AVENUE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GENOME SCIENCES, INC
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Pred. No. 0.82;
7; Mismatches
                                                       1488.1300004
                                                                                                                                                                                                                                                                                                        Version #1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/10226318
Publication No. US20030073187A1
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
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                                                      PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/09/448,868
FILING DATE: <Unknown>
APPLICATION NUMBER: 09/013,895
FILING DATE: 27-JAN-1998
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                        SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION UMMER: US/10/226,318
FILING DATE: 23-Aug-2002
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: Death Domain Containing Receptor 4 (DR4: Death Receptor 4), Member of the TNF-Receptor Superfamily and Binding to Trail (AP02-L)
                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
ADDRESSEE: HUMAN GENOME SCIENCES, INC
STREET: 9410 KEY WEST AVENUE
                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: Ni, Jian
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NAME: STEFFE, ERIC K.
REGISTRATION NUMBER: 36,688
REFERENCE/DOCKET NUMBER: 1488.1300004
                                                                                                                                                                                                                                                                          COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                  STATE: MD
                                                                                                                                                                                                                                                                                                                                                         ZIP: 20850
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                                                                                                                                                                                                                                                                                                                                                                                                                  ROCKVILLE
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Dixit, Vishva M.
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Pan, James G.
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Pred. No. 0.82;
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                                                                           ; ORGANISM: Homo sapiens
US-10-175-902-2
                                                                                                           SOFTWARE: PatentIn Ver.
SEQ ID NO 2
LENGTH: 468
TYPE: PRT
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Best Local Similarity 24.2%;
Matches 59; Conservative 2
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Publication No. US20030108516A1
Query Match 3.9
Best Local Similarity 24.3
Matches 59; Conservative
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APPLICANT: Dixit, Vishva M.
TITLE OF INVENTION: Death Domain Containing Receptor 4
FILE REFERENCE: 1488.130005
CURRENT APPLICATION NUMBER: US/10/175,902
CURRENT FILING DATE: 2002-06-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                                                                                                                                                                                                         PRIOR APPLICATION NUMBER: US 60/037,829
PRIOR FILING DATE: 1997-02-05
PRIOR APPLICATION NUMBER: US 60/035,722
PRIOR FILING DATE: 1997-01-28
                                                                                                                                                                                                                                                                       PRIOR
PRIOR
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PRIOR FILING DATE: 2000-05-05
PRIOR APPLICATION NUMBER: US 60/132,922
PRIOR FILING DATE: 1999-05-06
PRIOR APPLICATION NUMBER: US 09/013,895
PRIOR FILING DATE: 1998-01-27
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                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 13
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SEQUENCE CHARACTERISTICS:
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MOLECULE TYPE: protein
SEQUENCE DESCRIPTION: SEQ ID NO:
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TELEFAX: (202)371-2540
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Pan, James G.
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                   Score 101.5; D
Pred. No. 0.82;
   Mismatches
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; LENGTH: 1702
; TYPE: PRT
; ORGANISM: Homo 8
US-09-738-973-434
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                         Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILE REFERENCE: 210121.475C9
CURRENT APPLICATION NUMBER: US/09/738,973
CURRENT FILING DATE: 2000-12-14
NUMBER OF SEQ ID NOS: 587
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Mannion, Jane
APPLICANT: Kalos, Michael D.
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR
TITLE OF INVENTION: THE THERAPY AND DIAGNOSIS OF LUNG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE:
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                 192 DSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENP 25:
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                                                      -TASSEPVSP----LQEKLS------PFFTLDLSPTEDKSSKPSSFTEKVVY
                                                                                        VTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAM----DKNNKATKYRYPFVY 191
                                                                                                                             FDPMSFQCSPPKAESECLESGASFL-DSPGYSKDKPSANKKDAETGSSQCQTPGS----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FastSEQ for Windows Version 3.0
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Elliot, Mark
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20.1%; Pred. No. 7.5;
ative 57; Mismatches
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; ORGANISM: Homo sapiens
US-09-854-133-434
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US-09-854-133-434
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APPLICANT: Secrist, Heather
TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR
TITLE OF INVENTION: THE THERAPY AND DIAGNOSIS OF LUNG CANCER
FILE REFERENCE: 210121.475C10
CURRENT APPLICATION NUMBER: US/09/854,133
CURRENT FILING DATE: 2001-05-11
NUMBER OF SEQ ID NOS: 735
SOFTWARE: FRARESEQ for Windows Version 3.0
SEQ ID NO 434
                                                                                                                                                                                                                                                                                                                                                                   Query Match 3.4%; Score 100.5; DB 10; Best Local Similarity 20.1%; Pred. No. 7.5; Matches 122; Conservative 57; Mismatches 183;
                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
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APPLICANT: Mohamath, Raodol
APPLICANT: Henderson, Robe
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        617 AVASGQTQTGAVTHDPPQDSVPVSSVSLIPPPPPPPKNVARMLALALAESAQQASTQSLKR
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                                                                                                                                                                                                                                                                                                                                  20 ASGLSSSTRSRESQT-------PFQANVE 49
AFSPKIGRKLSKSPSM-----SI-SEPISVT---LPPRVS----
                                                                                                                                              FDPMSFQCSPPKAESECLESGASFL-DSPGYSKDKPSANKKDAETGSSQCQTPGS-----
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                                  DSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENP
                                                                       -TASSEPVSP----LQEKLS
                                                                                                        VTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAM----DKNNKATKYRYPFVY
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                                                                       - PFFTLDLSPTEDKSSKPSSFTEKVVY
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APPLICANT: Algate, Paul A.

APPLICANT: MCNeill, Patricia D.

TITLE OF INVENTION: COMPOSITIONS AND METHODS

TITLE OF INVENTION: THE THERAPY AND DIAGNOSI

FILE REFERENCE: 210121.475C11

CURRENT APPLICATION NUMBER: US/10/144,649A

CURRENT FILING DATE: 2002-08-21

NUMBER OF SEQ ID NOS: 749

SOPTWARE: FREESEQ for Windows Version 3.0

SEQ ID NO 434

LENGTH: 1702

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US-10-144-649A-434
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US-10-144-649A-434
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Best Local Similarity
Matches 122; Conserv
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                                                                                                                                                            FDPMSFQCSPPKAESECLESGASFL-DSPGYSKDKPSANKKDAETGSSQCQTPGS-----
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                    AFSPKIGRKLSKSPSM---
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                    -SI-SEPISVT---LPPRVS-
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; ORGANISM: Homo
US-09-859-Q53-32
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Matches
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                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION NUMBER: US/09/859,053
CURRENT FILING DATE: 2001-05-16
PRIOR APPLICATION NUMBER: JP 2001-99508
PRIOR FILING DATE: 2001-03-30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Tezuka, Katsunari
APPLICANT: Hori, No. US20020102658Aluaki
TITLE OF INVENTION: HUMAN MONOCLONAL ANTIBODY AGAINST A
TITLE OF INVENTION: COSTIMULATORY SIGNAL TRANSDUCTION MOLECULE
TITLE OF INVENTION: PHARMACEUTICAL USE THEREOF
FILE REFERENCE: 06501-079001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION NUMBER: JP 2000-147116
PRIOR FILING DATE: 2000-05-18
NUMBER OF SEQ ID NOS: 43
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les 70; Conservation
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-SDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFI 389
                                                                                                                                                                                                                              FAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMOLMEGKKYCSVKGBPPDLTWYCF 228
                                                       --ESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSS--GLYSLSSVVTVPSSN
                                                                                          RVESKAQ--CWVKTF-----
                                                                                                                             RDNRKVTHEHYYYYGMDVWGQGTTVTVSSASTKGP----SVFPLAPCSRSTS-----
                                                                                                                                                                                                 SAIGTAGDTYYPGSVKGRFTI---SRENAKNSLYLQMNSLRA-----GD--TAVYYCV 115
                                                                                                                                                                                                                                                                     LEGVQCEVQLVESGGGLVQPGGSLRLSCAASGFTFSSYDMHW-----VRQATGKGLEWV
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                                                                                                                                                                                                                                                                                                                                         Score 99; DB 10; Length 470; Pred. No. 1.4; Indels 2; Mismatches 142; Indels
                                                                                        ---PHIGVASDOPHTYPLTSQASWNDWWPLHQ---
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RESULT 37
US-10-216-163-236
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US-09-820-893-60
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; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-820-893-60
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CURRENT FILING DATE: 2001-03-30
PRIOR APPLICATION NUMBER: 09/531,119
PRIOR FILING DATE: 2000-03-20
PRIOR APPLICATION NUMBER: 60/102,895
PRIOR FILING DATE: 1998-10-02
NUMBER OF SEQ ID NOS.60
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO.60
                                         Sequence 236, Application US/10216163 Publication No. US20030149239A1 GENERAL INFORMATION:
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Best Local Similarity
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TITLE OF INVENTION: 31 Human Secreted Proteins
FILE REFERENCE: PZ033P1
        APPLICANT: Baker, Kevin P. APPLICANT: Desnoyers, Luc
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                                                                                                                                                                              GKKPKETYGGSDLREDA 287
                                                                                                                                                                                                                                                                                                                                                                              ----FPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECGSNTAL----
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19.2%; Pred. No. 0.92;
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NUMBER OF SEQ ID N
SEQ ID NO 236
LENGTH: 327
TYPE: PRT
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CURRENT FILING DATE: 2002-08-09
PRIOR APPLICATION NUMBER: 10/119,480
PRIOR FILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: 60/059113
PRIOR FILING DATE: 1997-09-17
PRIOR FILING DATE: 1997-09-17
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APPLICANT:
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PRIOR FILING DATE: 1998-03-27
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APPLICANT: Wood, William I.
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES
TITLE OF INVENTION: ACIDS ENCODING THE SAME
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PRIOR APPLICATION NUMBER: 60/063549
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PRIOR APPLICATION NUMBER: 60/064103
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APPLICATION NUMBER: 60/
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                                         454
                                                                              176
                                                                                                                                                           127
                                                                                                                                                                                              362 VPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNP----SVTPPTPETALQCTADK-----
                                                                                                                                                                                                                                        102 ---GVA----
                                                                                                                                                                                                                                                                           302 ENDGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQ 361
                                                                                                                                                                                                                                                                                                                                                          242 YGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIERVESKAQCWVKTF 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   127 LPG----GENLNFVTPSGQRIS-PFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNK 181
                                                                                                                                                                                                                                                                                                                                                                                                                                        182 ATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLI 241
                                                                                                                                                                                                                                                                                                                      76
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  ELTLSVTEPSQGRVAGALIGVLLGVLLLSV----
                                                                            VYNWVRLGTFPTPSPGSMVQ-----DEVSGQLILTNLSLTSSGTYRCVATNOMGSASC 228
                          ------NTALIAGLAVG---GVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDR
                                                                                                                                                         -PDFYTNGLGLINLTV------LVPPSNPLCSQSGQTSVGGSTALRCSSSEGAPKP 175
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Godowski, Paul J.
Grimaldi, J. Christopher
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Smith, Victoria
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Pred. No. 0.92;
13; Mismatches
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CURRENT FILING DATE: 2002-08-26
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                                    DR FILING DATE: 1998-06-17

DR APPLICATION NUMBER: 60/089905

DR FILING DATE: 1998-06-18

DR APPLICATION NUMBER: 60/090472

DR FILING DATE: 1998-06-24

DR APPLICATION NUMBER: 60/090557
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FILING DATE: 1997-09-17
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APPLICATION NUMBER: 60/082804
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Grimaldi, J. Christopher
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Gerritsen, Mary
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Wood, William I.
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Watanabe, Colin L.
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FILING DATE: 1998-07-07
APPLICATION NUMBER: 60/095302
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FILING DATE: 1998-06-25
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APPLICATION NUMBER: 60/106905
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FILING DATE: 1998-09-10
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APPLICATION NUMBER: 60/101738
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FILING DATE: 1999-01-12
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182 ATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLI
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                                                              127 LPG----GFNLNFVTPSGQRIS-PFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNK 181
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ILING DATE: 1999-04-28
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RESULT 39
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CURRENT APPLICATION NUMBER: US/10/230,163
CURRENT FILING DATE: 2002-08-28
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APPLICANT: Wood, William I.
TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC TITLE OF INVENTION: ACIDS ENCODING THE SAME
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PRIOR APPLICATION NUMBER: 60/059113
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Grimaldi, J. Christopher
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1998-06-25

APPLICATION NUMBER: 60/095302 FILING DATE: 1998-08-04 APPLICATION NUMBER: 60/095318

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1998-07-07

APPLICATION NUMBER: 60/090695 FILING DATE: 1998-06-25 APPLICATION NUMBER: 60/091982

FILING DATE: 1998-08-04 APPLICATION NUMBER: 60/095916

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PRIOR OR RELING DATE: 1999-01-12
OR APPLICATION NUMBER: 60/115733
OR APPLICATION NUMBER: 60/115733
OR PILING DATE: 1999-02-10
OR APPLICATION NUMBER: 60/125618
OR FILING DATE: 1999-03-10
OR APPLICATION NUMBER: 60/12575
OR FILING DATE: 1999-03-23
OR APPLICATION NUMBER: 60/125775
OR FILING DATE: 1999-03-23
OR APPLICATION NUMBER: 60/125775
OR FILING DATE: 1999-04-05
OR APPLICATION NUMBER: 60/1277887
OR FILING DATE: 1999-04-05
OR APPLICATION NUMBER: 60/13023
OR FILING DATE: 1999-04-21
OR APPLICATION NUMBER: 60/131270
OR FILING DATE: 1999-04-27
OR APPLICATION NUMBER: 60/131270
OR APPLICATION NUMBER: 60/131291
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OR APPLICATION NUMBER: 60/140650
OR FILING DATE: 1999-06-22
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OR APPLICATION NUMBER: 60/14758
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OR APPLICATION NUMBER: 60/146663
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OR APPLICATION NUMBER: 60/146963
OR APPLICATION NUMBER: 60/149320
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OR APPLICATION NUMBER: 60/149638
OR APPLICATION NUMBER: 60/149638 OR APPLICATION NO.

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FILING DATE: 1998-12-15
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NUMBER:

60/099812

1998-09-10

1998-09-10

APPLICATION NUMBER: 60/099596 FILING DATE: 1998-09-09 APPLICATION NUMBER: 60/099598 FILING DATE: 1998-09-09

FILING DATE: 1998-09-10 APPLICATION NUMBER: 60/099811

APPLICATION NUMBER: 60/099803

APPLICATION NUMBER: 60/098544 FILING DATE: 1998-08-31 APPLICATION NUMBER: 60/097986 FILING DATE: 1998-08-26

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1998-08-17

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RESULT 40
US-10-230-338-236
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Best Local :
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                                                                     TITLE OF INVENTION: SECRETED AND TRANSMEMBRANE POLYPEPTIDES AND NUCLEIC TITLE OF INVENTION: ACIDS ENCODING THE SAME FILE REFERENCE: P3530P1092
CURRENT APPLICATION NUMBER: US/10/230,338
CURRENT FILING DATE: 2002-08-28
CURRENT FILING DATE: 2002-08-28
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                                 APPLICATION NUMBER: 10/119,480 FILING DATE: 2002-04-09
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APPLICATION NUMBER: 60/16418
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APPLICATION NUMBER: 60/166361
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APPLICATION NUMBER: 60/059113 FILING DATE: 1997-09-17
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FILING DATE: 1999-12-07
APPLICATION NUMBER: 60/169835
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FILING DATE: 1999-12-07
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Grimaldi, J. Christopher
                                                                                                                                                                Stephan, Jean-Philippe F. Watanabe, Colin L. Wood, William I.
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NUMBER OF SEQ ID
SEQ ID NO 236
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APPLICATION NUMBER: 60/079294
FILING DATE: 1998-03-25
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FILING DATE: 1997-12-17
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FILING DATE: 1997-10-28
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271
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GKKPKETYGGSDLREDA
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Result
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    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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1 MGLVGVQVLLVLVA
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## ALIGNMENTS

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384 NEFPCSİYKDEMEREMRKESRNMSLYNVDKARIVLPRIFISNDKDSLKCPCAPEHITNST 443	383 EETPNFIIPSN	PVGAFNSDNFKSKGRGYNWANFDTENKVCYLFNAKPTCLINDKNFIATTALSHPQEVD		275QAKDLRECNRIVFEASASDQPTQYEEELTDYQKIQEGFRQNDQGMIKSAFL 325	286 VIERVESKAQÇWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGV 339	220 CFKPDKNETFDHLAYLSKNVVNDWQNKCPRKNIGNSKFGLWVDGNCEEIPYVQDV 274	227 CFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDT 285	164 THAASFVMEMDKNSSYRHPAVYDEDKKICYMLYLSAQENMGPRYCSKDAENKD-AMF 219	FVYDSKI	113 PVATGNOKLKDGGFAFPQANDHISPISIKNLRERYKENPDLMKLNDLALCK 163	113 DVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCA 167	58 FMEKYDIEKTHSSGIRVDLGEDAEVGNSSYRIPAGKCPVFGKGIVIQNSEVSFLT 112	53 FMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLE 112	: :        :   :   :   :   :   :   :	6 VQVLLVLVADCTIFASGLSSSTRSRESQTLSASTSGNPFQANVEMKT 52	Match 15.3%; Score 447; DB 2; Length 562; Local Similarity 25.9%; Pred. No. 5.9e-27; es 159; Conservative 91; Mismatches 231; Indels 132; Gaps 26;	RESULT 1  A44944  A44944  C;Species: Plasmodium fragile C;Species: Plasmodium fragile C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 11-May-2000 C;Accession: A44944 R;Peterson, M.G.: Nguyen-Dinh, P.; Marshall, V.M.; Elliott, J.F.; Collins, W.E.; Anders Mol. Biochem. Parasitol. 39, 279-284, 1990 Mol. Biochem. Parasitol. 39, 279-284, 1990 A;Title: Apical membrane antigen of Plasmodium fragile. A;Reference number: A44944; MUID:90205978; PMID:2181309 A;Accession: A44944 A;Residues: J-562 <pet> A;Cross-references: GB:M29898</pet>

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RESULT 2
B44986

apical membrane antigen 1 - malaria parasite (Plasmodium falcipa: C;Species: Plasmodium falciparum C;Species: Plasmodium falciparum C;Species: Plasmodium falciparum C;Cpate: 28-Apr-1993 #text_change C;Date: 28-Apr-1993 #sequence_revision 28-Apr-1993 #text_change C;Date: A.W.; Waters, A.P.; Carr, D.

Wol. Biochem. Parasitol. 42, 285-288, 1990
A;Title: Analysis of variation in PF83, an erythrocytic merozoit. A;Reference number: A44986; MUID:91101665; PMID:2270110
A;Accession: B44986
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A;Residues: 1-622 <THO>
A;Cross-references: GB:M34553
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NDEMLDPEASFWGEEK---RASHTTPVLMEKPY
                             SDLMQEAEPSFWDEAEENIEQDGETHVMVEGDY
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                                                                 DNMKIIIASSAAVAVLATILMV-----YLYKR----KGNAEKYDKMDEPQDYGKSTSR-
                                                                                                                               LKCPCDPEIVSNSTCNFFVCK-----CVEKRAEVTSNNEVVVKEEYKDEYADIPEHKPTY
                                                                                                                                                                                                ALSHPNEVENNF--PCSLYKDEIKKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDS
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Pred. No. 1.2e-25;
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apical membrane antigen 1 - malaria parasite (Plasmodium falciparum) C;Species: Plasmodium falciparum C;Date: 12-Oct-1989 #sequence_revision 12-Oct-1989 #text_change 09-Jun-2000 C;Accession: A32499
R;Peterson, M.G.; Marshall, V.M.; Smythe, J.A.; Crewther, P.E.; Lew, A.; Si. Mol. Cell. Biol. 9, 3151-3154, 1989
A;Title: Integral membrane protein located in the apical complex of Plasmod: A;Reference number: A32499; MUID:89384584; PMID:2701947
A;Accession: A32499
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C;Keywords: membrane protein; surface antigen
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A;Molecule type: DNA; m
A;Residues: 1-622 <PET>
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LDPEASFWGEEK---RASHTTPVLMEKPY
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                                QEAEPSFWDEAEENIEQDGETHVMVEGDY
                                                                       KMKIIIASSAAVAVLATILM----VYLYKR----KGNAEKYDKMDEPOHYGKSNSR-NDEM
                                                                                                                                                  KCPCDPEIVSNSTCNFFVCK----
                                                                                                                                                                                   QCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTA-----DEQNECGSN-----
                                                                                                                                                                                                                          LSHPIEVEHNF---PCSLYKNEIMKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDSL
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Pred. No. 1.2e-25;
86; Mismatches 212
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RESULT 4
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A39238
66K merozoite surface antigen precursor - Plasmodium
C;Species: Plasmodium knowlesi
C;Date: 13-Sep-1991 #sequence\_revision 13-Sep-1991 #t
C;Accession: A39238
R;Waters, A.P.; Thomas, A.W.; Deans, J.A.; Mitchell,
J. Biol. Chem. 265, 17974-17979, 1990
A;Title: A merozoite receptor protein from Plasmodium

Plasmodium knowlesi

#text\_change G.H.; Hudson,

07-Feb-1997

receptor protein from Plasmodium

knowlesi is

highly conserved D.E.; Miller,

L.H.; and գ 3

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A;Reference number: A39238; MUI
A;Accession: A39238
A;Status: prelintinary
A;Molecule type: mRNA
A;Residues: 1-563 <WAT>
A;Cross-references: GBI-J05631
C;Keywords: surface antigen
 R.Thomas, A.W.; Waters, A.P.; Carr, D.
Mol. Biochem. Parasitol. 42, 285-288, 1990
A.Title: Analysis of variation in PF83, an erythrocytic A; Reference number: A44986; MUID:91101665; PMID:2270110
A; Accession: D44986
A; Status: preliminary; nucleic acid sequence not shown; A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 1-622 <THO>
A; Cross-references: GB:M34555
C; Keywords: membrane protein; surface antiqen
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SCV--GGQIQSTS-----VDCTADEQNECGSN--TALIAGLAVGGVLLLALLGGGCYFAK 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IEREIKKQSRNMNLYSVDKERIVLPRIFISTDKESIKCPCEPEHISNSTCNFYVC-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KSKGRGYNWANFDSV-NNKCYIFNTKPTCLINDKNFFATTALSHPQEVDNEFPCSIYKDE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -----PSVTPPTPETALQCTADKFPDSFGACDVQACKRQKT 429
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -GVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAG---SLSEETPNFIIPSN 393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -EKFDNLVYLSKNVSND----WENKCPRKNLGNAKFGLWVDGNCEEI-----PYVNEVEAR
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                                                                                                                                                                                                                                               (Plasmodium falciparum)
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A;Cross-references: C;Keywords: membrane
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                                                                                                                                                                                                                                                                                                                                                           apical membrane antigen 1 - malaria parasite (Plasmodium falciparum) C;Species: Plasmodium falciparum C;Date: 28-Apr-1993 #sequence_revision 28-Apr-1993 #text_change 09-Ju C;Accession: A44986
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A; Residues: 1-622 <T
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Best Local Similarity. 26.2
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;Cross-references: GB:M34552
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101 PDRLPYRNNFLEDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPM----ELLEKNS : | | : : | | : : : |
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147; Conserv
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                                                                           GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
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                                                  GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           YVKNLDELTLCSRHAGN--MNPDNDKNSNYKYPAVYDYNDKKCHILYIAAQENNGPRYCN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -- TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM
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                                                                                                                                                                                      protein; surface antigen
                                                                                                                                      14.1%;
26.2%;
                                                                                                                      8O;
                                                                                                                    Score 412; DB 2;
Pred. No. 3.8e-24;
0; Mismatches 214
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PMID: 2270110
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RESULT 7
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C;Keywords: membrane protein; surface antigen
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                                                                                                                                                                                                                                                                                                        PDRLPYRNNFLEDVPT-EKEYKOSGNPLPGGFNLNFVTPSGORISPFPM----ELLEKNS
                                                                                                                                                                                                                                                                                                                                                        GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
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GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                 VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK
                                                                                                                                                   YVKNLDELTLCSRHAGN--MNPDNDKNSNYKYPAVYDYNDKKCHILYIAAQENNGPRYCN
                                                                                                                                                                                                                                                         SN----TTFLKPVATGNQDLKDGGFAFP-
                                                 - KDQSKRNSMFCFRPAKDKLFENY-----TYLSKNVVDNWEKVCPRKNLENAKFGLWVD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Score 410; DB 2; 1
; Pred. No. 5.4e-24;
80; Mismatches 214;
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PMID:2270110
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A;Title: Structure of the apical membrane antigen I (AMA-1)
A;Reference number: A44964; MUID:90114335; PMID:2608101
A;Scrature.
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                                    NDKDFVATTALSSI-EEGPQESFPCDIYKKKIAEEIKVMNVNRNNNGNDTIKFPRIFISD
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                                                                                                                                                                                  -----PLTSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLV
                                                                                                                                                                                                                                       SEYQKKEVHDN-----KTLLECNQIVPNES--ASDOPKQYEKHLEDTAKIRRGIVDRNGK 318
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nilarity 25.8%;
Conservative 8
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Pred. No. 3.7e-23;
6; Mismatches 202
                                                                                                                                        YRADQVKSKGKGYNWANYDKKTK---KCYIFNKKPTCLI
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A;Cross references: GB:X60550
A;Experimental source: brain
A;Note: nucleotide sequence not given; conceptual translation
C;Superfamily: microtubule-associated protein MAPIB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                microtubule-associated protein MAP 1B - rat (fragment)
C;Species: Rattus norvegicus (Norway rat)
C;Date: 21-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 16-Feb-1997
C;Accession: A56577
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A; Molecule type: mRNA
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Eur. J. Cell Biol. 57, 66-74, 1992
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      n 4.3%; Score 127; DB 2;
Similarity 19.4%; Pred. No. 0.54;
97; Conservative 55; Mismatches 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SSPPIDAAA-AEPYGFRSSMLFDTMQHHLALSR-----DLTTSSVEKDNGGKT 1760
                                SETIPTDKTVTYKHMDPPPAP 2100
                                                                                             PPSG-----
                                                                                                                                                                                           RVESKAQCWVKTFENDGVASDQPHTYPLTSQASWN--DWW----PLHQSDQP--HSGGVG 340
                                                                                                                                                                                                                                                                                                                                 RL----
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                                                                                                                                                                                                                                                                                                                                                                                       LLEKNSNIKASTDLGRCAEFAFKTV-----AMDKNNKATK-----YRYPFVYDSKK 195
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                --NTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDL
                                                              NFIIPSNPSVT-----PPTP 401
                                                                                                                             RNYGFYYVDTTGEGKCALSDQVPDCLVSDSA-----
                                                                                                                                                             ARQDVDLCLVSSCE----FKHPKTELSPSFINPNPLEWFAGEEPTEESERPLTQSGGAP
                                                                                                                                                                                                                                                           KPRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIE
                                                                                                                                                                                                                                                                                          LLDDISNGYDDTEDGGHTLGDCSYSYETTEKITSFPESESYSYETTTKTTRSPDTSAYCY 1938
                                                                                                                                                                                                                                                                                                                                                                                                                       PGDFNYAYQKPESTTESPDEEDYDYESHEKTIQAHDVGGYYYEKTERTIKSPCDSGYSYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                           PGGFNLNFVTPSGQRISP-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QDKEVDGTLYREPAG-----LCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPL 127
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                                                                                              -GKQQGRQCDETPPTSVSESAPSQTDSDVPPETEECPSITADANLDSEDE
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        R;Kappe, S.H.I.; Noe, A.R.; Fraser, T.S.; Blair, P.L.; Adams, Proc. Natl. Acad. Sci. U.S.A. 95, 1230-1235, 1998
A;Title: A family of chimeric erytocyte binding proteins of A;Reference number: Z16577; MUID:98115903; PMID:9448314
A;Accession: T09127
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                            C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 11-Jun-1999 C;Accession: T09127
                                                                                                                                            probable erythrocyte-binding protein MAEBL -
C;Species: Plasmodium yoelii
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Pred. No. 0.
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                                                                                                                                                           Plasmodium yoelii
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A; Molecule type:

J.H. malaria

parasites

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A;Cross-references: EMBL:X16623; NID:g57826; PIDN:CAA34620.1; A;Note: the authors translated the codon GCA for residue 723 a. C;Keywords: brain; spinal cord; tandem repeat; tubulin binding F;258-461/Region: 17-residue repeats F;628-741/Region: arginine/lysine-rich
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C;Date: 07-Sep-1990 #sequence_revision 03-Mar-1995 #text_change 05-Nov-1999
C;Accession: S06017
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DCTIFASGLSSSTRSRESQTLSASTSGNPFQANVEMKTFMERF--NLTHHHQSGIYVDLG
                                                                  RNYGFYYVDTTGEGKCALSDQVPDCLVSDSA-----
                                                                                                                                 ARQDVDLCLVSSCE----FKHPKTELSPSFINPNPLEWFAGEEPTEESEKPLTQSGGAP
                                                                                                                                                                                                RVESKAQCWVKTFENDGVASDQPHTYPLTSQASWN--DWW----PLHQSDQP--HSGGVG 340
                                                                                                                                                                                                                                                                                                                                      KPRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIE 288
                                                                                                                                                                                                                                                                                                                                                                                                        LLDDISNGYDDTEDGGHTLGDCSYSYETTEKITSFPESESYSYETTTKTTRSPDTSAYCY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TIEKTT - - KTPEDGGYSCEITEKTTRTPEEGGYSYEISEKTTRTPEVSGYTYEKTERSRR
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   GKQQGRQCDETPPTSVSESAPSQTDSDVPPETEECPSITADANIDSEDE
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microtubule-associated protein MAPIB - mouse N;Alternate names: microtubule-associated pro C;Species: Mus musculus (house mouse) C;Date: 30-Sep-1991 #sequence revision 30-Sep C;Accession: S07549; S44387; A33645 R;Noble, M.; Lewis, S.A.; Cowan, N.J. J. Cell Biol. 109, 3367-3376, 1989 A;Title: The microtubule binding domain of mi A;Reference number: A33645; MUID:90094539; PM
A;Accession: S44387
A;Status: preliminary
A;Status: preliminary
A;Status: preliminary
A;Molecule type: protein
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A;Molecule type: protein
C;Superfamily: microtubule -associated protein
C;Superfamily: microtubule binding; phosphoprotein; tandem repeat
F;589-786/Domain: microtubule binding #status experimental <mTB
F;589-786/Domain: microtubule binding #status experimental <mTB
F;589-592,639-642,649-652,655-658,660-663,668-671,674-677,679-682,
R-K-E/D-X)
                                                                                                                                                                                   A; Molecule type: mRNA
A; Residues: 1-2464 (NOB)
A; Cross-references: EMBL:X51396; NID:g52999; PIDN:CAA35761.1;
A; Cross-references: EMBL:X51396; NID:g52999; PIDN:CAA35761.1;
A; Sanchez, C.; Paddila, R.; Pactucci, R.; Zabala, J.C.; Avila,
R; Sanchez, C.; Paddila, R.; Pactucci, R.; Zabala, J.C.; Avila,
Arch. Biochem. Biophys. 310, 428-432, 1994
A; Title: Binding of heat-shock protein 70 (hsp70) to tubulin.
A; Reference number: S44387; MUID:94234720; PMID:8179328
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A;Introns: 62/1; 1648/1;
C;Keywords: alternative
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A; Cross-references: EMBL
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C; Genetics:
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RESULT 13
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A;Title: A family of chimeric erythrocyte binding proteins A;Reference number: 216577; MUID:98115903; PMID:9448314
A;Accession: T09129
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                           probable erythrocyte-binding protein MAEBL - Plasmodium berghei C;Species: Plasmodium berghei C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change C;Accession: T09129
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F;91,116,351,888,1124,1153,1168,1208,1662,1877,1918,2003,2030,2054,2083/Binding
F;147,969,1336,1562,1563,1702,1708,1990,2057,2063,2419/Binding site: phosphate (F;1953/Binding site: phosphate (Tyr) (covalent) #status predicted
                                                                                                                                                              A; Experimental source: C; Genetics:
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                                                                                                             A; Introns: 6
C; Keywords:
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A;Cross-references: EMB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SSPPIDAAT-----AEPYGFRSSMLFDTMQHHLALNR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMSLYASLASEKVQSLEGEKLSPKSDISPLTPRESSPLYSPGFSDSTSAAKETAAAHQAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DCTIFASGLSSSTRSRESQTLSASTSGNPFQANVEMKTFMERFN-----LTHHHQ
                FMERFNLTHHH----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GSLSEETPNFIIPSNPSVT-----PPTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LTQSGGAPPPSG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ELIDIVIERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWN--DWW----PLHQSDQP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EKTERSRRLLDDISNGYDDTEDGGHTLGDCSYSYETTEKITSFPESESYSYETSTKTTRS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDSGYSYETIEKTT--KTPEDGGYTCEITEKTTRTPEEGGYSYEISEKTTRTPEVSGYTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ----FPMELLEKNSNIKASTDLGRCAEFAFKTV-----AMDKNNKATK-----YRY
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Conservative
                                                 Conservative
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19.3%;
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                                                 49;
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Pred. No. 2;
53; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -GKQQGRQCDETPPTSVSESAPSQTDSDVPPETEECPSITAD
                                                                Score 112;
Pred. No. 2.
                                                                                                             cell binding; erythrocyte invasion;
                                                                                                                                                                                               NID:g2947229;
                                                 Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             401
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                                                  135;
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                                                                                                                                                                                                PIDN: AAC05367.1;
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                                                  Indels 170;
                                                                                                                                                                                                                                                                                                                                 Adams,
                  ----VDLGQDKEVDGTLY
                                                                                                                                                                                                                                                                                                 of malaria
                                                                                                                                                                                                                                                                                                                                 J.H.
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                                                                                                                                                                                                                                                                                                                                                                                               (fragment)
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                                                                                                                                                                                                PID: 92947230
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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-600 <MUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             probable oligopeptide-binding lipoprotein - Streptomyces coelicolor
C;Species: Streptomyces coelicolor
C;Date: 05-Nov-1999 #sequence_revision 05-Nov-1999 #text_change 17-Mar-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Reference number: Z21556
A;Accession: T34757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R; Murphy, L.; Harris, D.; Parkhill, submitted to the EMBL Data Library,
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Superfamily:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Accession: T34757
                                                                                                                                                                                                                                                                                                                                                                                                                               SCOEDB:SC2A11.11 family: dipeptide
                                                                                                          184
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                                     243
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                                                                                                                                                                         FNLNFVTPS-----GQRISPFPMELLEKNSNI-KASTDLGRCAE-FAFKTVAMDKNNKAT 183
                                                                                                                                                                                                                  GAD-
                                                                                                                                                                                                                                                                                     DIDLAQTGLSPQGRTTALKEHKANLD-NPVSGYIRYAAFPQNVKPFDNIHCRKAVLY---
   GIIIMGWGPDF---
                                   GSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLD 278
                                                                                                        KY-RYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIY 242
                                                                                                                                                                                                                                              GQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG- 130
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                                                                    EVATAESLQASLKKVG--IDVEIDQYDGSQYASVIGSPSNV-----QKKG-----Y
                                                                                                                                                                                                                                                                                                                     DCTIFASGLSSTRSRESQTLSASTSGNPFQANVEMKTF---MERFNLTHHHQSGIYVDL 71
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                                                                                                                                         IGTNMLPPAVPGSEGOKYDPYEMSGANKKGNVEKAKEELKACNQPNGFKTTIAVRNNKPV 439
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL:AL031184; PIDN:CAA20180.1; ce: strain A3(2)
                                                                                                                                                                                                                                                                                                                                                                                                                               transport protein
PSVQGYGLPLWHSDYILD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J.; Barrell, B.G.;
August 1998
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F;394-556/Domain: thrombospondin type 1 repeat homology cTHR2>
F;319-371/Domain: thrombospondin type 1 repeat homology cTHR2>
F;372-432/Domain: thrombospondin type 1 repeat homology cTHR2>
F;433-433/Domain: thrombospondin type 1 repeat homology cTHR3>
F;433-493/Domain: thrombospondin type 1 repeat homology cTHR3>
F;434-556/Domain: thrombospondin type 1 repeat homology cTHR3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Accession: A48569

R;Pasamontes, L.; Hug, D.; Humbelin, M.; Weber, G.

Mol. Biochem. Parasitol. 57, 171-174, 1993

A;Title: Sequence of a major Eimeria maxima antigen homologous

A;Reference number: A48569; MUID:93149203; PMID:8426611

A;Accession: A48559
                                          A;Status: preliminary; translated A;Molecule type: mRNA A;Residues: 1-768 <NAG>
                                                                                                                                        DNA Res. 5, 31-39, 1998

A; Title: Prediction of the coding sequences of unidentified A; Reference number: Z14086; MUID:98290545; PMID:9628581
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C;Species: Eimeria maxima
C;Date: 01-Dec-1993 #sequence_revision 18-Nov-1994
A;Cross-references: EMBL:AB011099; NID:g3043577; PIDN:BAA25453.1; PID:g3043578
A;Experimental source: brain; clone HG2246
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A;Note: sequence extracted from NCBI backbone (NCBIN:123776, NCBIP:123777)
C;Superfamily: thrombospondin type 1 repeat homology; von Willebrand facto
E;45-218/Domain: von Willebrand factor type A repeat homology <VWA2>
                                                                                                                       A;Accession: T00073
                                                                                                                                                                                                                                                                                                          hypothetical protein KIAA0527 - human (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: nucleic acid
A; Residues: 1-724 < PAS>
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                                                                                                                                                                                                                                                      ;Species: Homo sapiens (man)
;Date: 22-Jan-1999 #sequence_revision
                                                                                                                                                                                                                                       Accession: T00073
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Best Local Similarity
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                                                                                                                                                                                                                 T.; Ishikawa, K.; Miyajima, N.; Tanaka, A.; Kotani,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   572
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                211 KKYCSVKGEP-----PDLTWYC----FKPRKSVTENHHLIYGSAY------V
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                                                                                                                                                                                                                                                                                                                                                                                                                               SAGGEGSNGAGPGEDKEEESKGFPTAAVAGGVAGGVLAIA-AGAGAFY
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thrombospondin type 1 repeat homology <THR5>
thrombospondin type 1 repeat homology <THR6>
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                                                                                              from
                                                                                            GB/EMBL/DDBJ
                                                                                                                                                                                                                                                           22-Jan-1999 #text_change 21-Jul-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----ASWNDWWPLHQSDQPHSGGVGRNYGFYY 347
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                                                                                                                                                                 genes. IX.
                                                                                                                                                                                                                 Nomura, N.; Ohara,
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RESULT 17
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                                                                                                                                                                                                                                                                                                                                                                                                                                     R.Song, Z.; Krishna, S.; Thanos, D.; Strominger, J.L.; Ono, S.J.
J. Exp. Med. 180, 1763-1774, 1994
A;Title: A novel cysteine-rich sequence-specific DNA-binding protein interacts with the n and functions as a transcriptional repressor.
A;Reference number: I38869; MUID:95053707; PMID:7964459
A;Accession: I38869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            transcription factor NFX1 [imported] - human
C;Species: Homo sapiens (man)
C;Date: 06-Sep-1996 #sequence_revision 06-Sep-1996 #text_change 02-Sep-2000
C;Accession: I38869
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A; Residues: 1-1104 < RES>
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Best Local Simi
Matches 103;
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                                                                                                                                                                                                    PAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRIS 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GCPGLSRGPVIATIVTVLCLLLLLAGVGMVWGYRKCQHKSSVYKLNVGQRQARHYHQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ECG--SNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNK-----GVQAAHHEHE 496
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                                       CHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAFISK 257
                                                                                                                    PFPMELLEKNSNIKASTDLGRCAEFAFKTVAMD----KNNKATKYRYPFVYD----SKKRL 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TQPPVETTVPEIQDSFPYLLSEDFFG--
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                                                                               EGDCGPVSRTSVISC----RC---SFRTKELPCTSLKSEDAT----FMCDKRCNKKRL 677
                                                                                                                                                              PCGQTPL-SQLLELGSSS----RKTCMDPVPSCG--KVCGKPLPCG-SLDFIHTCEKLCH
                                                                                                                                                                                                                                           Conservative
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                                                                                                                                                                                                                                                            3.7%; Score 107.5;
19.7%; Pred. No. 6.1;
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22.0%; Pred. No. 3.
  GRHKCNE-----IC-----CVDKEH----
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A;Residues: 1-1009 <SCH>
A;Cross-references: EMBL:AL353819; GSPDB:GN00112; NCSP:8D4.10
A;Experimental source: cosmid contig 8D4; strain 74
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A; Introns: .153/2; 480/1
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A; Accession: T48727
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Species: Neurospora crassa
C;Date: 05-May-2000 #sequence_revision 05-May-2000
C;Accession: T48727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       retinoblastoma binding protein 2 related protein [imported] - N,Alternate names: protein 8D4.10 \,
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           --VGR-----NYGFYYVDTT------GEGKCALSDQVPDCLVSDSAAVSYTAAGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----LTCHCGASVIYPPVPCGTRPPECTQTCARVHECDHPVYHSGHSEEKCPPCTFLTQK 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CPLNCGRKLRCGLHRCEEPCHRGNC------QTCWQASFDE----
                                                                                                                                                            PFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYV
                                                                                                                                                                                                                                                                                     LDLNSVERR-----GQPTACKEPSKKKNRPHGLEEAPSYCPTEEEWKE-----
                                                                                                                                                                                                                                                                                                                  VD-GTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDV----PTEKEYKQSGNPLPGGF 131
                                                                                                                                                                                                                                                                                                                                                                  VAAAGTSSNNASARASPTVTSHSS-----NGKSKTAPVNSNGYHPPKSQIPLSFMKSEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SALERKKRLAEAFHISEDSDPFNIRSSGSKFSDSLKEDARKD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SVDCTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGACDVQACK-RQKTSCVGGQIQST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WCMGKHEFRSNIPCHLVDISCGLPCSATLPCGMHKCQRLCHKGECLVDE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HTYPLTSQASWNDWWP-------LHQSDQP--HSGG------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CPNQALRGYRFGVWK-----KGRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQP
    FEN----DGVASDQPHTY--PLTSQASWNDWWPLHQSD-QPHSGGVGRNYGFYYVDTT
                                         DKKPLDLFRLKKAVEARGGFDKVCKLKKWAEIGRDLGYSGKIMSSLSTSLKNSYQKWLCP 257
                                                                                 GENP-DAFISKCPNQALRGY----RFGVWKK-GRCLDYT-ELTDTVIERVESKAQCWVKT
                                                                                                                                                                                                                                              NLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRC----AEFAFKTVAMDKNNKATKYRY 187
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                                                                                                                                                                                                                                                                                                                                                                                                                                              3.7%; Score 107; DB 2; Length 1009; ilarity 19.4%; Pred. No. 5.9; Conservative 97; Mismatches 191; Indels 17
                                                                                                                                                                                                        -PFEYIRKIT--PEASKFGICKIIPPESWNPDFAIDTEVRSLARQQ
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RESULT 20
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A; Residues: 1-415 CCHA>
A; Cross-references: GB: J05287; NID: g198708; PIDN: AAA39412.1;
A; Cross-references: GB: J05287; NID: g198708; PIDN: AAA39412.1;
C; Superfamily: lysosome-associated membrane protein
C; Keywords: glycoprotein; membrane protein
F; 1-25 Jomain: signal sequence #status predicted <SIG>
F; 26-415 / Product: lysosomal membrane glycoprotein 2 #status
     projectin - fruit fly C; Species: Drosophila
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A35560
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J. Biol. Chem. 265, 5008-5013, 1990
A;Title: The cDNA sequence of mouse LAMP-2. Evidence for two A;Reference number: A35560; MUID:90202978; PMID:2318880
A;Accession: A35560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            lysosomal membrane glycoprotein 2 precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 31-Mar_1991 #sequence_revision 31-Mar-1991 #text_change 20-Aug-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GSRAEACGAARSLIVCEARTSFHLFWNLCSE 474
                                                                                                                                                       LAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHE 496
                                                                                                                                                                                        GSSYMCNKEQVLSVSRAFQINTFNLKVQPFNVTKGQYSTAQDCSADEDNFL---VPIAVG
                                                                                                                                                                                                                          -----CKROKTSCVGGQIQ--
                                                                                                                     AALGGVLILVLL---AYFI----
                                                                                                                                                                                                                                                               QPQSAQLRLNNSQIKYLDLIFAVKNEKRFYLKEVNVYMYLANGSAFNISNKNLSFWDAPL
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       (Drosophila melanogaster) (fragment) melanogaster
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 106; DB Pred. No. 2; 24; Mismatches
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                                                                                                                                                                                protein-tyrosine kinase (EC 2.7.1.112) erbB2 precursor - human N;Alternate names: c-erb-B-2 protein precursor; kinase-related transforming | C;Species: Homo sapiens (man) C;Date: 25-Oct-1987 #sequence_revision 06-Dec-1996 #text change 11-Jun-1999 C;Accession: A24571; A25491; Ā44188; B44188; I59509; I57622 R;Yamamoto; T.; Ikawa, S.; Akiyama, T.; Semba, K.; Nomura, N.; Miyajima, N.; Nature 319, 230-234, 1986 .
A;Title: Similarity of protein encoded by the human c-erb-B-2 gene to epider: A;Reference number: A24571; MUID:86118663; PMID:3003577 A;Accession: A24571; MUID:86118663; PMID:3003577
A; Molecule type: DNA
                                                     A;Molecule type: mRNA
A;Residues: 1-1255 <AAM-
A;Residues: 1-1255 <AAM-
A;Residues: 1-1255 <AAM-
A;Residues: 1-1255 <AAM-
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A;Residues: A25491; MUID:86016729; PMID:2995967
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A; Residues: 1-6658 <
                                        A; Accession: A25491
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C; Keywords: muscle
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       SEM
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Miyajima, N.;

Saito,

protein

erbB

to epidermal

growth

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C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 17-Nov-2000 C;Accession: T13331
C;Accession: T13331
R;Daley J; Southgate, R.; Ayme-Southgate, A.
J, Mol. Biol. 279, 201-210, 1998
J,Title: Structure of the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin protein: isoforms and implication in the Drosophila projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin projectin pro
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary; translated from GB/EMBL/DDBJ
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mes 76; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 182 ATKYRYPFVYDSKKRLCHILYV------SMQLMEG---KKYCSVKGEP-PDLTWYC 227
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SPISCYIIEKQDKYGKWERALDVPADQCKATIPDLVEGQ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VITDKPSPPNGPLQISDVHKEGCHLKWKRPSHDGGTPIEYFQ-----IDKLEPETGCWIP 2556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GSPIQG-----YIVEVKDKYSPLWEKALETNSPTPTATVQGLIEGNEYQFRVVALNKGNL
                                                                                                                            TALQCTADKFPDSFG----ACDVQA--CKRQKTSCVGGQ
                                                                                                                                                                                                                                                                                                                                                                                                         DQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNP------
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19.0%;
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                                                                                                                                                                                                                                                                      ----RNP-FDEPGKPENLKATDWDKDHVDLAWTPPVIDGG 2635
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Pred. No. 1.4e+02;
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2674
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A;Residues: 1-517, 'RALL',522,'S',524-654,'V',656-1169,'A',1171-1255
A;Cross-references: GB.M11730, NID:g183986
R;King, C.R.; Kraus, M.H.; Aaronson, S.A.
Science 229, 974-976, 1985
A;Title: Amplification of a novel v-erbB-related gene in a human mam A;Reference number: I59509; MUID:85272597; PMID:2992089
A;Accession: I59509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Cross-references: GDB::120613; OMIM:164870
A;Map position: 17q21.1-17q21.1
A;Introns: 25/1; 75/3; 147/1; 88/3
A;Note: the list of introns is incomplete
C;Function:
C;Function: catalyzes the phosphorylation of a peptidyl tyrosine residue by
C;Superfamily: epidermal growth factor receptor; protein kinase homology
C;Keywords: ATP; autophosphorylation; duplication; glycoprotein; phosphoprotein
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A;Title: Tyrosine kinase receptor with extensive homology to EGF receptor A;Reference number: A44188; MUID:86070181; PMID:2999974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:L29395; NID:g459807; PIDN:AAA35809.1; PID:g459808 R;Tal, M.; King, C.R.; Kraus, M.H.; Ullrich, A.; Schlessinger, J.; Givol, Mol. Cell. Biol. 7, 2597-2601, 1987 A;Title: Human HER2 (neu) promoter: evidence for multiple mechanisms for A;Reference number: I57622; MUID:87286898; PMID:3039351 A;Accession: I57622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Molecule type: DNA A; Residues: 1-191 <TAL > A; Residues: 1-191 <TAL > A; Cross - references: GB: M16792; NID: 9183983; C; Comment: Amplification and overexpression
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 832-909 < REX>
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                                                                                                                                                                                                                                                                                                                                                                     ;736-1255/Domain: intracellular #status predicted <INT>
;718-983/Domain: protein kinase homology <KIN>
;718-983/Domain: protein kinase homology <KIN>
;726-734/Region: protein kinase ATP-binding motif
;68,124,187,259,530,571,629/Binding site: carbohydrate (Asn) (covalent) #status
;686/Binding site: phosphate (Thr) (covalent) (by protein kinase C) #status pred
;753/Active site: Lys #status predicted
;753/Active site: Lys #status predicted
;1139,1221;1222,1248/Binding site: phosphate (Tyr) (covalent) (by autophosphory)
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                                                                                                                                                                                                                                                                                                      Query Match
Best Local .
  340
                                                                                                                                                                                                                                  18
                                                                                                                                                                                                                                                                                                        Similarity
--RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
                                              KKRLCH----
                                                                                                                                     PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS
                                                                                                                                                                                                                             LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT
                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                      -----ELHCPALVTYNTDTFESMPN-
                                                                                                                                                                                                                                                                                                   3.6%;
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                                              ---ILYVSMQLMEGKKYC-
                                                                                                                                                                                                                                                                                43;
                                                                                                                                                                                                                                                                                                      Score 104; D. Pred. No. 14;
                                                                                            STDVGSCTLVCPLHNQEVTAEDGTQRCEKCSKPCA---
                                                                                                                                                                                                                                                                                  Mismatches 174;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PIDN:AAA58637.1; PID:g553332 of this erbB-related gene occurs
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                                                                                                                                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                            Length 1255;
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                                              SVKGEPPDLTWYCFKPRK 232
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A;Gene:
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R;Murphy, L.; Harris, D.; Wood, V.;
submitted to the EMBL Data Library,
A;Reference number: Z21780
A;Accession: T38236
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C; Accession: T38236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          hypothetical protein SPAC23A1.17 - fission yeast (Schizosaccharomyces C;Species: Schizosaccharomyces pombe C;Date: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 03-Dec
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88; Conserv
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   ACDVQACKR----
                                     GAAVTNTTTHITTSTNTSTVIPSNPNSVFLVDCTHSQCPTDLPNIATTQHSLRYLDNAS
                                                                                                                                                     HQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSD----
                                                                                                                                                                                            ---ANDFIDSTSEALTKIVD-----VDTLSAPFGND--SNSRPHSLKNVEK-
                                                                                                                                                                                                                                                                                                        YCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWK 272
                                                                                                                                                                                                                                KGRCLDYTELTDTVIERVESKAQCWVKT----FENDGVASDQPHTYPLTSQASWNDWWPL 328
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17.4%;
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Pred. No. 20;
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February 1998
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probable membrane protein YPR075c - yeast (Saccharomyces cerevisiae) N;Alternate names: hypothetical protein P9513.9 C;Species: Saccharomyces cerevisiae C;Date: 22-Aug-1996 #sequence_revision 06-Sep-1996 #text_change 06-FC;Accession: S69063
                                                                                                                                                                                                                                                        RESULT
T23024
                                                                                                                                                                                                        hypothetical protein H02I12.1 - Caenorhabditis elegans C;Species: Caenorhabditis elegans C;Date: 15-Oct-1999 #te:
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                                           A;Cross-references: EMBL:Z92789; PIDN:CABO7215.1; GSPDB:GN00022; CESP:H02I12.1
A;Experimental source: clone H02I12
                                                                           A; Molecule type: DNA
A; Residues: 1-1332 <WIL>
                                                                                                                             A; Reference number: A; Accession: T23024
                                                                                                                                          submitted to the EMBL Data Library, A;Reference number: Z19656
                                                                                                                                                                          R;McLay,
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A;Description: The sequence of S. cerevisiae c
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                Gene: CESP:H02I12.1
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Best Local
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position:
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Pred. No. 2.8;
23; Mismatches 58
                                                                                                                                                           March 199
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A;Molecule type: mRNA
A;Residues: 1-337,'T',39-1029 <COR>
A;Residues: 1-337,'T',39-1029 <COR>
A;Cross-references: GB:X63556
R;Pereira,'L.V.; D'Alessio, M.; Ramirez, F.; Lynch, J.; Sykes, B.; Pangilinan, Hum. Mol. Genet. 2, 961-968, 1993
Hum. Mol. Genet. 2, 961-968, 1993
A;Title: Genomic organization of the sequence coding for fibrillin, the defecti
                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 25
A47221
                                                                                                                                                                              Genomics 17, 476-484, 1993
A;Title: Fibrillin binds calcium and is coded by cDNAs that reveal a multidomain
A;Reference number: A47221; MUID:94010947; PMID:7691719
A;Accession: A47221
                                                                                                                                                                                                                                                                           C;Species: Homo sapiens (man)
C;Date: 02-Jun-1995 #sequence_revision 25-Apr-1997 #text_change 02-Aug-2002
C;Date: 02-Jun-1995 #sequence_revision 25-Apr-1997 #text_change 02-Aug-2002
C;Accession: A47221; I54355; S17064; I59574; S17062; S62111; A34198
R;Corson, G.M.; Chalberg, S.C.; Dietz, H.C.; Charbonneau, N.L.; Sakai, L.Y.
                                                                                                                                                                                                                                                                                                                                                                                  fibrillin 1 precursor - human (fragment)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  T--TEAATTVANDGPTDTYITG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RLISS---GNCQLGEGYDPSVQGCRTFSEIPARACDEQEVTTDAGLVQLMPYKTLEEVLT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VLLLALLGGGCYFAKRLDRN-KGVQA-----AHHEHEFQSDRGARKKRPSDLMQEAEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QYSSNDVPSTSAAPIGDRCSLDASGL-FSLGCSQKYIQCSNGAAIVRRCGESLYFNEATQ 745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -----YPLTSQASWNDWWPLHQSDQPHSGGVGRNY-------GFYYVDTTG 352
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLDYTELTDTVI----ERVESKAQCWVKTFENDGVA----SDQPHT------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -PHEDPDGYDDEKTFDAKDLFGATRRKRSAYYGTEQSVYGQQSAQISARQAQVNKDC---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E--CTYRDEVPECGSQGSTSSPVITTPGQDQSSNYYGIPSDD--VPSTTQTPVGDRCAYV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETA------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TKYRYPFVYDSKK------RLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKA 182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CSETCGVSTTIVAVTIGTQTSDDLSAPSEYIENDGVTTQSTWNDQPSTTQAPNSYESYTT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----LQCTADKFPDSFGACDVQACK-----RQKTSC----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -QQYTTPTFLTFGDCF-----DQFIFCSGNGINRMAACPIGETFDKTLRS-------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3.5%;
llarity 18.0%;
Conservative 74
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -GPNAKFVESNIEQVFP-----KNRHSK--KQLG-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74;
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Pred. No. 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -VGGQIQSTSVD----CTADEQNECGSNTALIAGLAVGG
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A; Map position: 15q21.1-15q2...

A; Map position: 15q21.1-15q2...

A; Introns: 2236/1; 2258/1; 2297/1

A; Introns: 2236/1; 2258/1; 2297/1

C; Superfamily: fibrillin 1; EGF homology

C; Keywords: alternative splicing; calcium binding; extracellular matrix; glycoprotein; C; Keywords: alternative splicing; calcium binding; extracellular matrix; glycoprotein; C; Keywords: alternative splicing; calcium binding; extracellular matrix; glycoprotein; C; Keywords: alternative splicing; calcium binding; extracellular matrix; glycoprotein; C; Keywords: fibrillin (5'-region exon C splice form) #status predicted <MATC>

7-113-1002/Product: fibrillin (5'-region exon C splice form) #status predicted <MATC>
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A;Residues: 565-575;1890-1892,'I',1894-1900 <MAD>
C;Comment: Fibrillin is a major component of elastin-associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Molecule type: protein
A;Residues: 1166-1176,'X',1178-1180,'D',1182-1185 <LEE2>
R;Redidues: B.K.; Sakai, L.Y.; Keene, D.R.; Glanville, R.W.
J. Biol. Chem. 264, 21381-21385, 1989
A;Title: Connective tissue microfibrils. Isolation and characterization of three large A;Reference number: A34198; MUID:90078246; PMID:2512293
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R;Dietz, H.C.; Valle, D.; Francomano, C.A.; Kendzior, R.J.
Science 259, 680-683, 1993
A;Title: The skipping of constitutive exons in vivo induced
A;Reference number: I59574; MUID:93157831; PMID:8430317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: mRNA
A;Residues: 'VLYTVVFIFLSYNKML',944-1444 <LEE1>
A;Cross-references: EMBL:X62008; NID:g31398; PIDN:CAB56534.1;
A;Accession: S62111
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A;Residues: 2217-2288,'I',2290-2325 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Reference number:
Accession: I59574
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 114; Conserv
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2351
                                                                                                                                                                                                                                                                                                                                  2196
                                                                                                                                                                                                                   2255 SAVDMDECKEP-DVC----KHGQCINTDGSYRCECPFGYTLAGNECVDTDECSVGNPCGN
                                                186
                                                                                                                                                                                                                                                                                                                                                                                     19
                            RYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPR----KSVTENHHLIY
                                                                                                                                                            GFNLN----FVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKY
                                                                                                                                                                                                                                                                      KEVDGTLYREPAGLCPIWGKHIELQQPD-----RLPYRNNFLEDVPTEKEYKQSGNPLPG
                                                                                                                                                                                                                                                                                                                            FEGGKCSSPKSRNHSKQECCCALKGEGWGDPCELCPTEPDEAFRQICPYGSGIIVG-PDD
                                                                                                                                                                                                                                                                                                                                                                                     FASGLSSSTRSR--ESQTLSASTSGNPFQANVEMKTFM--ERFNLTHHHQSGIYVDLGQD
                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EGF homology <EGF>>
EGF homology <EGF1>
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                                                                                                                                                                                                                                                                                                                                                                                                                                           61;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 102;
Pred. No. 6
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- LREDRRMCKDEDECEEGKHDCTEKOMECKNLIGTYMCIC
                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches 212;
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Glanville, R.W.;
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Sakai, L.Y.
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R;Danforth, H.D.; Augustine, P.C.; Ruff, M.D.; McCandliss, Poult. Sci. 68, 1643-1652, 1989
A;Title: Genetically engineered antigen confers partial pro A;Reference number: A60643; MUID:90160107; PMID:2622819
A;Accession: A60643
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A;Residues: 1-287 <DAN>
F;11-120/Region: 22-residue repeats (A-G-X-X-G-G-S-G-G-X-A-E-E-L-P-G-E-E-G-G-A-G)
                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Date: 14-May-1993 #sequence_revision 14-May-1993 #text_change 18-Jun-1993 C;Accession: A60643
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Eimeria tenella
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                                                                                                                                                     NPSVTPPTPETALQCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTADEQNECG
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                                                           SGFPTAAVAG-GVGGVLLLLAAVGGGVAAYSGGGGGGGAEEAEQVEFEGEESGGASAETPE
                                                                                         SN--TALIAGLAVGGVIJJLALLGGGCYFAKRLDRNKGVQAAHH-EHEFQSDRGARKKRPS
                                                                                                                            TPEAERPEEQPSTETPAEE-PTEGGA----
                                                                                                                                                                                                                      SGGVGRNYGFYYVDT----TGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPS
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Pred. No. 2.7;
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plastoquinol-plastocyanin reductase (BC 1.10.99.1) cytochrome f precursor - W.Alternate names: cytochrome b-f complex cytochrome f C;Species: chloroplast Triticum aestivum (common wheat) C,Date: 12-Feb-1993 #sequence\_revision 12-Feb-1993 #text\_change 03-Jun-2002 C;Accession: S07296; S27220 R;Willey, D.L.; Howe, C.J.; Auffret, A.D.; Bowman, C.M.; Dyer, T.A.; Gray, J Mol. Gen. Genet. 194, 416-422, 1984 A;Title: Location and nucleotide sequence of the gene for cytochrome f in where the complex control of the gene for cytochrome fire where the complex control of the gene for cytochrome fire where the complex cytochrome for cytochrome fire where the complex cytochrome for cytochrome fire where the cytochrome fire where the cytochrome for cytochrome fire where the cytochrome fire where the cytochrome for cytochrome fire where the cytochrome for cytochrome for cytochrome for cytochrome fire where the cytochrome for cytochrome for cytochrome for cytochrome for cytochrome fire where the cytochrome for cyt

for cytochrome f in wheat chlorop.

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wheat

A;Reference number: S07296. A;Accession: S07296 A;Molecule type: DNA A;Residues: 1-320 <WIL1>

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                                                                                                                                                                                                                                                                                                                                                                                                                            hypothetical protein F15J5.90 - Arabidopsis thaliana C;Species: Arabidopsis thaliana (mouse-ear cress) C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 22-Oct-1999 C;Accession: T14812
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C;Keywords: chloroplast; chromoprotein; electron transfer; hem
F;1-35/Domain: transit peptide (thylakoid) #status predicted <
F;36-320/Product: cytochrome f #status experimental <MAT>
F;36-305/Domain: transmembrane #status predicted <TMM>
F;56,59/Binding site: heme (Cys) (covalent) #status predicted
F;60/Binding site: heme iron (His) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: protein A; Residues: 36-41, 'XX', 44-47 C; Genetics:
                                                                                                                                                                                                                                                                                               A;Residues: 1-715 <BEV>
A;Cross-references: EMBL:AL110123
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A;Accession: T14812
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A; Experimental source
                                                                                                                                                                                                   A;Introns: 140/3; 179/3; 231/2; 524/2; 552/3; 575/3
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                                                     TLFVRNINSNVEDSELQAL - - - FEDNPSEKDVNQGTLVV - FNLAPSVSNRDLENIFGVYG
                                                                                            TIFASGLSSSTRSRESQTLSASTSGNPFQANVEMKTFMERFNLT--
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               -HHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRN
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21.8%; Pred. No. 3.1
                                                                                                                                                 20.1%;
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20.1%; Pred. No. 12;
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                                                                                                                                                                                                                                                                                                                                                                                     August 1999
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                                                                                                                                                                 DB 2;
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A; Residues: 1-732 < MIT>
C; Genetics:
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A;Title: The primary structure of porcine liver acylamino A;Reference number: JU0132; MUID:90110044; PMID:2691504
A;Accession: JU0132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;587,675,707/Active site:
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C;Superfamily: acylaminoacyl-peptidase
C;Ksywords: acetylated amino end; homotetramer; hydrolase;
F;1/Modified site: acetylated amino end (Met) #status exper
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Introns: 4/3; 49/1; 91/2; 122/3; 148/1; 202/3; 248/3; C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C; Accession: JU0132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acylaminoacyl-peptidase (EC 3.4.19.1) [validated] - pig
N;Alternate names: acyl-peptide hydrolase; acylamino-acid-releasing enzyme
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 30-Jun-1993 #sequence_revision 30-Jun-1993 #text_change 21-Jul-200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JU0132
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                                                                                                                                                                                                                                                                                               134
323
                                                                                                                                                                                                                                                                                                                              186 -----RYPFVYDSKKRLC-----HILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPR 231
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                                                                                                                                                                                                                                                                                                                                                                                                         133 LNFVTPSGQRISPFPMELLEKNSN-----IKASTDLGRCAEFAFKTVAMDKNNKATKY 185
                                                                                                                                                                                                                                                                                                                                                                                                                                             20
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGN------PLPGGFN 132
 VPHQ----
                                                                                                                                                                                                                                                       KSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIER---
                                                                                                                                                                                                                                                                                             NLSALEKHGPVYEDDCFGCLSWSHSETHLLYVA-----
                                                                                                                                                                                                                                                                                                                                                                  VVFAGPAGNSVET-RGELLSRESPSGTMKAVLRKAGGTGTAEEKQFLEV-WEKNRKLKSF
                                  TPPTPETALQC----
                                                                        FCTNRRSALYYVDLTG-GKCEL
                                                                                                                                             PVLCVLDIESGN---ISVLEGVPESVSPGQAFWAPGDTGVVFVGWW-----HEPFRLGIR 273
                                                                                                                                                                                                                    RPKAESFFQTKALDVTGSDDEMARTKKPDQAIKGDQF
                                                                                                                                                                                                                                                                                                                                                                                                                                             LSRQPALSAACLGPEVTTQYGGR---YRTVHTE--WTQRDLERMENIRFCRQYLVFHDGDS
                                                                                                                                                                                -----VESKAQCWVKTFEN--DGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGV- 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ---YVGENPDAFISKCPNOALRG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LSPTKNI-RYPEFSMKTASVNNDQEGRRFSHLDHLFSSSSYNNASHKASTFQQPQSFGSV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NFLEDVPTEKEYKQSGNPLPGGFNLNFV-----TPSGQ-RISPF--PMELLEKN---SN
                                                                                                         -GRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSV 396
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
-QCGQLCLYDWYTRVTSVVVDIVPRQLGE-DFSGIYCSLLPLGCWSADSQRV 376
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3.4%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      57;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
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                                  -TADKFPDSFGACDVQA--CKRQKTSCVGGQIQST 439
                                                                      LSDESVAVT---SPRLSPDQCRIVYLRFPSL 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    178;
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386/

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translation initiation factor eIF-4 gamma homolog F27H5.30 [similarity] - A:
,Alternate names: protein F27H5.30
c;Species: Arabidopsis thaliana (mouse-ear cress)
c;Date: 02-Jun-2000 #sequence_revision 02-Jun-2000 #text_change 20-Jun-2000
C;Accession: T49219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Residues: 1-1606 <RIE>
A;Cross-references: EMBL:AL163852; GSPDB:GN00061; ATSP:F27H5.30
A;Experimental source: cultivar Columbia; BAC clone F27H5
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A; Accession: T49219
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        submitted to the Protein Sequence Database, April 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;Introns: 455/3; 1370/2; 1435/2; 1523/1; 1529/1; 1558/3; 1586/2
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773
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                                                                                                                                                                                                                                                                                                                                               IDKSTEGSSHA--SSEISGSSPOEKDLKCDNRT-----ASDKLDERSVISDAKHET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GEVNISLSQKNVEACSLSSS----QOPKPSFVSGVPNSSAPPAKSPVETVPLAKSSVETV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VFDSPQRSRQDLFAVDTQMGSVTSLTAGGSGGSWKLLTI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PPVKSSVETAPVTTTEIRRAEMVSESISVEDQTCKVEPPHNLTENRGQTMPDSLVSDPET
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SSDSTSSVKARNAQNVMSSAL - - PVNAKVSVK--
                                                                  GSSDEVSDNCINTEKKYSRDFLLKFADLCTALPEGFDVSPDIANALIVAYMG-----
                                                                                                   DEQNECGSN-----
                                                                                                                                                                      SNPSVTPPTPETALQCTADKFP-----DSFGACDVQACKRQKTSCVGGQIQSTSVDCTA
                                                                                                                                                                                                                                          HSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSE--ETPNFIIP-
                                                                                                                                                                                                                                                                           LSGVLEKAQNEVDGATDVCPVSEKLAVTDDTSSDLPHSTHVLSSTV-----PLGHS-ET
                                                                                                                                                                                                                                                                                                             ---VIERVESKAQ-----CWV--KTFENDGVASDQPH-TYPLTSQASWNDWWPLHQSDQP
                                                                                                                                                                                                                                                                                                                                                                              PRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDT----
                                                                                                                                                                                                                                                                                                                                                                                                                  A--TVAAKEN-----LSLPATNGFRKQLLKV-----STTSDAPTSDSVDTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFK
                                LDRNKGVQAAHHEHEFQ-----
                                                                                                                                     SNONLLPAIPQ-AVEAIVDTEPVKNEPEDWEDAADVSTPKLETA-----DNSVNAKR
                                                                                                                                                                                                        HKSAVETN---TRRNTSTKGKKKIKEILQKADAAGTTSDLYMAYKGPEEKKESSNVVHDV
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ASHHEHDSYPTPGKVMDRQASGARLDRRPSNV
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20.5%; Pre/
71;
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Pred. No. 4
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                                SDR---GAR-KKRPSDL 511
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             M.; Schaefer, M.; Mewes,
                                                                                                     TALIAGLAV----GGVLLLALLGGGCYFAKR
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genome polyprotein - Marburg virus (strain Popp)
N;Alternate names: structural protein L
N;Contains: RNA-directed RNA polymerase (EC 2.7.
C;Species: Marburg virus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 submitted to the EMBL Data Library, January 1994
A;Description: Full-length nucleotide sequence of Marburg virus
A;Reference number: S44049
A;Accession: S44054
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: genomic RNA
A; Residues: 1-2331 < BUW>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Molecule type: genomic RNA
A;Residues: 1-2331 <BUK>
A;Cross-references: EMBL:Z29337; NID:g450908; PIDN:CAA82542.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Accession: S44054; S32776
R;Bukreyev, A.A.; Volchkov, V.E.; Blinov,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Variety: strain Popp
C; Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 18-Jun-1999
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Best Local S
Matches 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cross-references: EMBL:X68494; NID:g296962; PIDN:CAA48508.1; Experimental source: strain Popp
                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                        176
                                                                                                                          137
                                                                                                                                                                                                                                                     234 VASYECFIMIKDVFIERYNTWEICARAWLEDSDGADYLPL----DVLGELYNQ-----
                                                                                                                                                                                                                                                                                              52
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                                                                                                                                                                                                                                                                                                                                                                                                                           68;
                                                                                                                                                                                                                                                                                                                                                                               4 VGVQVLLVLVADCTIFASGLSSSTRSRESQTLSASTSG-----NPFQANVEM---
                                       DSKKRLCH-ILYVSMQLMEGKKYC-SVKGEPPDLTWYCFKPRK-SVTENHHLIYGSAY
                                                                                                                                                                                                           WGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNL-----NFV 136
                                                                                                                                                                                                                                                                                                                                      IGTDLELFGIADFIIFK--VPVKTIIRNAVSLQASKPGLRVWYRDQNLTPYLCDDEFIVS
SLQKHWGHPVLYIDVALDKVKKHAQSVKILKPKVMFETFCVFKFIVAKNHYHSQGSWY 430
                                                                                TPGKYWFQSQRIESYYEELCSLNWKFKISGNKAECAQNFIKTII---QGKLTPQQYCELF
                                                                                                                      TP----SGORISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVY 191
                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                --KTFMERFNL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                          3.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                         31;
                                                                                                                                                                                                                                                                                                                                                                                                                         Score 99; DB:
Pred. No. 83;
31; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sequence of Marburg
                                                                                                                                                                                                                                                                                              --THHHQSGIYVDLGQDKEVDGTLYREPAGLCPI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RNA
                                                                                                                                                                                                                                                                                                                                                                                                                           101;
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                                                                                     372
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probable dehydrogenase (EC 1.8.1.-) udhA - Escherichia coli (strain C;Species: Escherichia coli (c;Pate: 12-Sep-1997 #sequence\_revision 17-Sep-1997 #text\_change 01-M C;Accession: E65203; S21563 R;Blattner, F.R.; Plunkett III, G.; Bloch, C.A.; Perna, N.T.; Burlan A.; Rose, D.J.; Mau, B.; Shao, Y. A;Residues: 1-444 <BLAT>
A;Cross-references: GB:AE000470; GB:U00096; NID:g2367332;
A;Experimental source: strain K-12, substrain MG1655 A;Title: The complete genome sequence of Escherichia coli A;Reference number: A64720; MUID:97426617; PMID:9278503 A;Accession: E65203 A;Status: preliminary; nucleic acid A;Molecule type: DNA Science 277, 1453-1462, 1997 sequence not shown; translation #text\_change 01-Mar-2002 K-12 PIDN: AAC76944.1; PID: 91790400; Burland, not V.; Riley, shown

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RESULT 31

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C;Species: Listeria innocua
C;Species: Listeria innocua
C;Date: 27.Nov-2001 #sequence_revision 27.Nov-2001 #text_change 27.Nov-2001
C;Accession: AC1525
R;Glaser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Bl.
; Dominguez-Bernal, G.; Duchaud, E.; Durand, L.; Dussurget, O.; Entian, K.D.; Fsil
D, Jones, L.M.; Karst, U.
Science 294, 849-852, 2001
A;Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitournam, Jok, C.; Schlueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wel
A;Title: Comparative genomics of Listeria species.
A;Reference number: AB1077; MUID:21537279; PMID:11679669
A;Accession: AC1525
A;Status: preliminary
A;Holecule type: DNA
A;Residues: 1-521 <GLA>
A;Experimental source: strain Clip11262
C;Genetics:
A;Gene: lin0739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Molecule type: DNA
A;Cross-references: EMBL:X66026; NID:g43236; PIDN:CAA46822.1; PID:g43237
A;Cross-references: EMBL:X66026; NID:g43236; PIDN:CAA46822.1; PID:g43237
C;Genetics:
A;Gene: udhA
C;Superfamily: dihydrolipoamide dehydrogenase; dihydrolipoamide dehydrogenase
C;Keywords: oxidoreductase
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AC1525
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submitted to the EMBL Data
A;Reference number: S21563
A;Accession: S21563
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Best Local (
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                                                                                                                                                                                                                                                                                                                                                                                                                           GERAAEIIH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           GVQAAHHEH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTG---EGKCALSDQVPDCLVSDSAAVS
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                                                                                                                                                                                                                                                                                                                                   [imported] - Listeria innocua (strain Clip11262)
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                                                                                                                                                                            lo, E.; Maitournam, A.; M.
J.A.; Voss, H.; Wehland
                                                                                                                                                                                                                                                Berche, P.;
tian, K.D.;
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alkaline amylopullulanase, probable [imported] - Streptococcus pneumoniae (strain C.Species: Streptococcus pneumoniae C.Species: Streptococcus pneumoniae C.Date: 03-Aug-2001 #sequence_revision 03-Aug-2001 #text_change 03-Aug-2001 C.Accession: B95031
C.Accession: B95031
R.Fettelin, H.; Nelson, K.E.; Paulsen, I.T.; Eisen, J.A.; Read, T.D.; Peterson, S. on, J.D.; Umayam, L.A.; White, O.; Salzberg, S.L.; Lewis, M.R.; Radune, D.; Holtza nson, T.; Hickey, E.K.; Holt, I.E.
Science 293, 498-506, 2001
A.Authors: Loftus, B.J.; Yang, F.; Smith, H.O.; Venter, J.C.; Dougherty, B.A.; Mor A.Hauthors: Loftus, B.J.; Yang, F.; Smith, H.O.; Venter, J.C.; Dougherty, B.A.; Mor A.; Meference number: A95000; MUID:21357209; PMID:11463916
A.; Accession: E95031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Experimental source: strain C;Genetics: A;Gene: SP0268
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Residues: Ī-1280 <KUR>
A;Residues: Ī-1280 <KUR>
A;Cross-references: GB:AE005672; PIDN:AAK74446.1; PID:g14971739; GSPDB:GN00164; TIGR:SP4
A:Experimental source: strain TIGR4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
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Best Local Sim:
Matches 78;
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                           90;
                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
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                    MEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAF-ISKCPNQALRGY 266
                                                                                                                                                                                                                                                                        RLRLGNLMVLTAQGTPF
                                                                        W---TKATDGKAYPENVKSRDYMKGLIALRQSTDA--FRLKSLQDIKDRV-HLITV----
                                                                                                                                                                           KTPV-----AEDKVPNKSHLLRD------KDGNPFDYPYFIHDSYDSSDAVNKFD 100:
                                                                                                                                                                                                                     LCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRISPFP
                                                                                                                       MELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMQL
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                                                                                                                                                                                                                                                                                                                       RSRESQTLSASTSGNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETALQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIERVES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PLADDF---YIDISNNHISDI-----SSLK-NADFGKLDYF----FAEDQSIVNQPK 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKN--NKAT 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VYIYLADNKIKD-----ISPLAGKSFQ-----QLTLNNNEISDISPLSKMTLYSED
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----TFDNEGTLSTRTFASDELVTEPA-----KPSKTGFTFT-GWY
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                                                                                                                                                                                                                                                                                                                                                                           68;
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Pred. No. 12;
57; Mismatches
                                                                                                                                                                                                                                                                                                                                                                      Score 97.5; DE
Pred. No. 46;
68; Mismatches
                                                                                                                                                                                                                                                                        --IHSGQ-----EYGRTKQ----FRDPAY 957
                                                                                                                                                                                                                                                                                                                                                                                                                          BB
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Radune, D.; Holtzapple,
                                                                                                                                                                                                                                                                                                                                                                      Gaps
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                                                                           1051
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RESULT 35
A55624
A55624
A55624
A55624
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Species: Mus flys #sequence_revision 23-Mar-1995 #text_change 02-Aug-2002
C;Accession: A55624
R;Yin, W; Smiley, E; Germiller, J; Sanguineti, C; Lawton, T; Pereira, L; Ramirez J. Biol. Chem. 270, 1798-1806, 1995
A;Title: Primary structure and developmental expression of Fbn-1, the mouse fibrillin A;Accession: A55624; MUID:95130561; PMID:7829516
A;Accession: A55624; MUID:95130561; PMID:7829516
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Molecule type: mRNA
A;Residues: 1-2871 <YIN>
A;Cross-references: GB:L29454; NID:g575509;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Gene: Fbn-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;1201-1236/Domain:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
Matches 93; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Superfamily: fibrillin 1; EGF homology
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                                                                              2438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2173 GNPCGNGTCKNVIGGFECTCEEGFEPGPMMTCE-----DINECAQ-----N
                                                                                                                                                                                 2385 AYKKLCPHGR--GFMTNGADVDECKVIHDVCRNGEC----VNDRGSYHCICKTGYTPDI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 463
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      124 GNPLPGGFNLN----FVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKN 179
                          422
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                                                                                                                                                                                                                                                                                     QDECLDNREGYCFSEVFENMCQIGSSNRNPVT---KSECCCVGGRGWGLHCEICFFEGTV
                                                                                                                                                                                                                                                                                                                                        VIERVESK-AQCWVKTFEN---DGVASDQPHTYPLTSQAS--WNDWWPLHQSDQPHSGGV
                                                                                                                                                                                                                                                                                                                                                                                            TYMCICGPGY-QRRPDG--EGCIDENECQTKPGICENGRCLNTLGSYTCECNDGFTASPT
                                                                                                                                                                                                                                                                                                                                                                                                                                            WHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLD----YT-ELTD-----T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLLCAFRCVNTYGSYECKCPVGYV----LREDRRMCKDEDECAEGKHDCTEKOMECKNLIG
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QACKRQKTSC-
                                                                              TGTSCVDLNECNQAPKPCNFICKNT-----
                                                                                                                              SYTAAGSLSE--ETP---NFIIPSNPSVTPPTPETALQCTADKFPDSF-----GAC-DV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -PDSTKPDAKVAD-----AENKPS--
                                                                                                                                                                                                                                     ----GRNYGF------YYVDTTGEGKCALSDQVPD-----CLVSDSAAV
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:-\<del>c</del>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          $; Score 97.5; DB 2;$; Pred. No. 1.5e+02;51; Mismatches 139;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PIDN:AAA56840.1; PID:g575510
-QIQSTSVD---CTADEQNECGS
                                                                                EGSYQCSC---PNGYILQEDGRSCKDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C.; Lawton, T.; Pereira, L.; Ramirez,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 2871;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
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                             453
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                                                                                2486
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                                                                                                                                                                                                                                     373
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                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 37
F97279
F97279
TPR-repeat-containing protein, Cell-adhesion domain [imported] - Clostridium acetobutyli TPR-repeat-containing protein, Cell-adhesion domain [imported] - Clostridium acetobutyli C;Species: Clostridium acetobutylicum C;Species: Clostridium acetobutylicum C;Species: 14-Sep-2001 #sequence_revision 14-Sep-2001 #text_change 14-Sep-2001 C;Accession: F97279
R.Molling, J.; Berton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Lee, R.; Daly, M.J.; Bennett, G.N.; Koonin, E.V.; Smith, D.R.
J. Bacteriol. 183, 4823-4838, 2001
B.;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium Clo A;Reference number: A96900; MUID:21359325; PMID:21359325
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          R; Ushkaryov, Y.A.; Petrenko, A.G.; Gepper, P., Junes, Science 257, 50-56, 1992
Science 257, 50-56, 1992
A; Title: Neurexins: Synaptic cell surface proteins related A; Reference number: A40228; MUID:92320296; PMID:1621094
A; Accession: B40228
A; Accession: B40228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:M96375; NID:g205712; PIDN:AAA41705.1; C;Superfamily: neurexin; EGF homology C;Keywords: alternative splicing; transmembrane protein F;1-47/Domain: signal sequence #status predicted <SIG>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Rattus norvegicus (Norway rat)
C;Date: 21-Jul-1995 #sequence_revision 21-Jul-1995 #text_change
C;Accession: B40228; S27885
C;Accession: B40228; S27885
R;Ushkaryov, Y.A.; Petrenko, A.G.; Geppert, M.; Suedhof, T.C.
                                                                                                                                                                                                                                                                  C;Geneti
A;Gene:
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A; Residues: 1-468 < USH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          neurexin I-beta precursor - rat
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     S
                                                                                                                                                                                                                                                                                                                A;Cross-references: GB:AE001437; PIDN:AAK81025.1; PID:g15026149; GSPDB:GN00168
A;Experimental source: Clostridium acetobutylicum ATCC824
                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: DNA
A; Residues: 1-694 < KUR>
                                                                                                                                                                                                                                                                                                                                                                                                                       A; Status: preliminary
                                                                                                                                                                                    Query Match
Best Local :
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                                                                                                                                                            Matches 102;
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                                                                                                         36 SASTSGNPFQANVEMKTFMERFNLT-HHHQSGIYVDL-----GQDKEVDGTLYREPAGLC 89
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52; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---GGLANPTRVGGREPYPGSAEVIRESSSTTGMVVGIVAAAALCILILLYAMY--KYRN
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     PIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGGF---NLNFVTPSGQ---RI 143
                                                     SFTTTTNNVSADTTTPASTPOLDLTVTPNNEGNYNDLKWNMSGASQDYSYKLY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RDEG---SYHVDESRNYISNSAQSNGAVVKEKQPSSAKSANKNKKNKDKEYYV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A--AGSLSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGAC-----DVQACKRQKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EQGQPFQGQLS---GLYYNGLKVLNMAAENDANIAIVGNVRLVGEVPSSMTTESTATAMQ
                                                                                                                                                               Conservative
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                                                                                                                                                                                       18.1%;
                                                                                                                                                                                       3.3%; Score 97;
18.1%; Pred. No.
                                                                                                                                                               59;
                                                                                                                                                                 Mismatches
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R; Ushkaryov, Y.A.; Petrenko, A.G.; Geppert, M.; Suedhof, T.C. Science 257, 50-56, 1992
A; Title: Neurexins: synaptic cell surface proteins related to A; Reference number: A40228; MUID:92320296; PMID:1621094
A; Accession: A40228
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;Date: 21-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 09-Dec-2002;
;Dates: 1. A40228; S2788;  S27
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                                                                                                                                         SEMSTSIMETTTTLATSTARRGKPPTKEPISQTTDDILVAS-AECPSDDEDIDPCEPSS- 1402
                                                                                                                                                                                                                                                                                                                                          QSDQPHSGGVGRNYGFYY-----VDTTGE-----GKCALSDQVPDCLVSDSAAVSYT
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                                                                        SCVGGQIQSTSV-----DCTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLD
                                                                                                                                                                                                       A--AGSLSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGAC----DVQACKRQKT
                                                                                                                                                                                                                                                                         EQGQPFQGQLS---GLYYNGLKVLNMAAENDANIAIVGNVRLVGEVPSSMTTESTATAMQ
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             -GGLANPTRVGGREPYPGSAEVIRESSSTTGMVVGIVAAAALCILILLYAMY---KYRN
                                                                                                                                                                                                                                                                                                                                                                                                     3.3%; Score 97; DB larity 22.3%; Pred. No. 64; Conservative 38; Mismatches
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alpha-amylase (EC 3.2.1.1) [imported] - Streptococcus pneumoniae (strain R6) c;Species: Streptococcus pneumoniae (c;Species: Streptococcus pneumoniae (c;Date: 22-Octt-2001 #sequence_revision 22-Oct-2001 #text_change 02-Nov-2001 C;Accession: G97902 R; Accession: G97902 R; Hoskins, J.A.; Alborn Jr., W.; Arnold, J.; Blaszczak, L.; Burgett, S.; DeHoff, B. e, R.; LeBlanc, D.J.; Lee, L.N.; Lefkowitz, E.J.; Lu, J.; Matsushima, P.; McAhren, y, P.; Sun, P.M.; Winkler, M.E.
                                                                                                                                                                                                                                          RESULT
G97902
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Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, Ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; PMID:11130712
A;Accession: B86414
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A;Molecule type: DNA
A;Residues: 1-1020 <STO>
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R;Theologis, A.; Ecker, J.R.; Palm, Chin, C.W.; Chung, M.K.; Conn, L.; ansen, N.F.; Hughes, B.; Huizar, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hypothetical protein F28N24.14 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Datc: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 31-Dec-2001
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                                                                                                                         LALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLMQE-----AEPSFW 520
                                                                                                                                                                        GSSCVSWDEKAEIVESLGLQTDEASEMVEANSVVDTLDEKPS1
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                                       DEAEENI EQDGETHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LEWH---PRIPITQN-HLIYDDL----PHIIMDPYEECRGPPRLHLLDKFDINGPGS
-DSEQETESEGECFV
                                                                                    ---IGGVDFHSKDNENDK--
                                                                                                                                                                                                                                                        TATSSLKTG----ERPKGVFVSS-SLTPGSCTIASVLSECETEDAHDNFQFSPSQGQAAR
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Pred. No.
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                                                                                                                                                                                                            -GGQIQSTSVDCTADEQNECGSNTALIAGLAVGGVLL
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Maiti, R.; Marziali,
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J. Bacteriol. 183, 5709-5717, 2001
A;Authors: Yang, Y.; Young-Ballido, M.; Zhao, G.; Zook, C.; Baltz, R.H.; Jaskunas, A;Title: Genome of the Bacterium Streptococcus pneumoniae Strain R6.
A;Reference number: A97872; MUID:21429245; PMID:11544234
A;Accession: G97902
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C; Keywords: glycosidase; hydrolase
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A,Molecule type: DNA
A,Residues: 1-1256 <KUR>
A,Cross-references: GB:AE007317; PIDN:AAK99051.1; PID:g15457796; GSPDB:GN00174
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Search completed: October Job time : 49 secs
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                                                                                                                                                                                                                                                                                                                                                                                                                                1131 ----SHESTÄEEKPDSTPSK-----PEHQDPAPEA----
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                                                                                                          1240 -----LLALLGLG 1247
                                                                                                                                                                                                                                                                                                                      1162 -----KPDAKVAD-----
                                                                                                                                                                                                                                                                                                                                                                      357 ALSDQVPDCLVSDSAAVSYTAAGSLSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSF 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    987 W---TKATDGKAYPENVKSRDYMKGLIALRQSTDA--FRLKSLQDIKDRV-HLITV---- 1036
                                                                                                                                         463 VGGVLLLALLGGG 475
                                                                                                                                                                                                                                                              417 GACDVQACKRQKTSCVGGQIQSTSVD-----CTADEQNEC-----GSNTALIAGLA 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     297 WVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTGEGKC 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             267 RFGVW------KKGRCLDYTE-----LTDTVIERVESKAQC 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  208 MEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAF-ISKCPNQALRGY 266
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         148 MELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMQL 207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 943 KTPV-----AEDKVPNKSHLLRD-----KDGNPFDYPYFIHDSYDSSDAVNKFD 986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         908 KLKLGNLMVLTAQGTPF-------IHSGQ-----EYGRTKQ-----FRDPAY 942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 88 LCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRISPFP 147
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                                                                                                                                                                                                               -QPAQEAQASSVKEAVQNESVENSSKKNIPATPDRQAELPNTGIKNENKLLFAGIS 1239
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Result
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Maximum Match 100%
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Perfect score:
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      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
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8 SWISS-PROT entry is copyright. It is produced through a collabween the Swiss Institute of Bioinformatics and the EMBL outset European Bioinformatics Institute. There are no restrictions by non-profit institutions as long as its content is in ified and this statement is not removed. Usage by and for complications.
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     LDPEASFWGEEK---RASHTTPVLMEKPY
                                                                            KMKIIIASSAAVAVLATILM----VYLYKR-----KGNAEKYDKMDEPQHYGKSNSR-NDEM
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                                      QEAEPSEWDEAEENIEQDGETHVMVEGDY
                                                                                                              --TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM
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01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence up
16-OCT-2001 (Rel. 40, Last annotation)
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Malaria; Signal; Transmembrane;
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"Analysis of variation in PF83, an erythrocytic candidate antigen of Plasemodium falciparum.";
Mol. Biochem. Parasitol. 42:285-287(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plasmodium falciparum (isolate thtn
Eukaryota; Alveolata; Apicomplexa; F
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        by non-profit institutions as long dified and this statement is not removed. titles requires a license agreement (See send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biochem. Parasitol. 42:285-287(1990).
FUNCTION: INVOLVED IN PARASITE INVASION OF ERYTHROCYTES
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GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                                                                                    S----KTTFLTPVATENODLKDGGFAFP-----
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                                                        -KDESKRNSMFCFRPAKDKLFENY-----TYLSKNVVDNWEEVCPRKVLENAKFGLWVD
                                                                                           VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK
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Eukaryota; Alveolata; Apicom
MCBI TaxID=5852;
                                                                                                                                                                                                   Waters A.P., Thomas A.W., Mitchell G.H., McCutchan T.F.;
"Intra-generic conservation and limited inter-strain variation in a
protective minor surface antigen of plasmodium knowlesi merozoites.";
MOI. Biochem. Parasicol. 44:141-144(1991)
-i- FUNCTION: MEROZOITE RECEPTOR PK66 IS A SURFACE ANTIGEN INVOLVED
IN PARASITE INVASION OF ERVTHROCYTES.
-i- SUBCELLULAR LOCATION: TYPE I MEMBANGE PROTEIN. CONCENTRATED AT THE
APICAL END PRIOR TO RUPTURE, FOLLOWING WHICH IT CAN DISTRIBUTE
ITSELF ENTIRELY ACROSS THE SURFACE OF THE FREE MEROZOITE. DURING
INVASION PK66 IS EXCLUDED FROM THE ERYTHROCYTE AT, AND BEHIND, THE
                                                                                                                                                                                                                                                                                                                                                                                                              Miller L.H., McCutchan T.F., Cohen S.;
"A merozoite receptor protein from Plasmodium knowlesi is conserved and distributed throughout Plasmodium.";
J. Biol. Chem. 265:17974-17979(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PK66 PI
P21303;
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01-AUG-1991 (Rel. 19, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation updat.)
Merozoite receptor PK66 precursor (66 kDa p
                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
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                                                                                                                        INVASION INLEGRACO.
MISCELLANBOUS: PK66 EXPRESSED IN MATURE SCHIZOWIS
PROCESSED AS THE SCHIZONT RUPTURES, YIELDING A 42/
ASSOCIATED WITH THE SURFACE MEROZOITE.
ASSOCIATED WITH THE SURFACE MEROZOITE.
                                                                                                                 SIMILARITY:
P.FRAGILE.
                                                                                                                                                                                        INVASION INTERFACE.
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RESULT 5
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PRINTS; PR01361; MEROZOITESA.
Malaria; Signal; Transmembrane;
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Pred. No. 7.2e-
94; Mismatches
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7.2e-25;
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01-OCT-1996 (Rel. 3
16-OCT-2001 (Rel. 4
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MEDLINB=91101665; PubMed=2270110;
Thomas A.W., Waters A.P., Carr D.;

Thomas A.W., Waters A.P., Carr D.;

"Analysis of variation in PF83, an erythrocytic merozoite variation in PF83, an erythrocytic merozoite variation of Plasmodium falciparum.";

Mol. Biochem. Parasitol. 42:285-287(1990).

-i- FUNCTION: INVOLVED IN PARASITE INVASION OF ERYTHROCYTES.

-i- SUBCELLULAR LOCATION: Type I membrane protein.

-i- SIMILARITY: STRONG TO AMA-1 FROM P.CHABAUDI AND P.FRAGII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Plasmodium falciparum (isolate
Eukaryota; Alveolata; Apicomple
NCBI_TaxID=57266;
[1]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M58548; AAA29721.1;
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                                                                                                                                                                                                                                                                                                                                                                                Similarity
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                                                                                                                                                                                                                                                                   PDRLPYRNNFLEDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPM----ELLEKNS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Signal; Transmembrane; Antigen; Glycoprotein.
                                                                                                                              VKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKG
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-----LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTA
                                               NCEDIPHVNEF---SANDLFECNKLVFELS--ASDOPKQYEQHLTDYEKIKEGFKNKNAS
                                                                                                                                                                                                         NIKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCS
                                                                                                             -KDESKRNSMFCFRPAKDKSFQNY-----TYLSKNVVDNWEKVCPRKNLENAKFGLWVDG
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34, Last sequence update)
40, Last annotation updat
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                                                                                                                                                                                                                                                                                                                                                                Score 412; DB 1;
Pred. No. 6.3e-24;
1; Mismatches 219
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APICAL MEMBRANE ANTIGEN 1.
EXTRACELLULAR (POTENTIAL).
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Thomas A.W. Waters A.P., Carr D.;
"Analysis of variation in PF83, an erythrocytic merozoite v:
candidate antigen of Plasmodium falciparum.";
Mol. Biochem. Parasitol. 42:285-287(1990).
-i- FUNCTION: INVOLUTE IN PARASITE INVASION OF ERYTHROCYTES
                                                                                                                                                                          CARBOHYD
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Bukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
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P50490;
01-OCT-1996
                                                                                                           Thomas A.W. Waters A.P., Carr D.;

"Analysis of variation in PF83, an erythrocytic merozoite variation in PF83, an erythrocytic merozoite variation and plasmodium falciparum.";

Mol. Biochem. Parasitol. 42:285-287(1991).

-!- FUNCTION: INVOLVED IN PARASITE INVASION OF ERYTHROCYTES.
-!- SUBCELLULAR LOCATION: Type I membrane protein.
-!- SIMILARITY: STRONG TO AMA-1 FROM P.CHABAUDI AND P.FRAGII
-!- SIMILARITY: STRONG TO AMA-1 FROM P.CHABAUDI AND P.FRAGII
-!- PK66 FROM P.KNOWLESI.
                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EW the European Bioinformatics Institute. There are no restr
                                                                                                                                                                                                                                                                                                                                   Plasmodium falciparum
Eukaryota; Alveolata;
NCBI_TaxID=5838;
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16-OCT-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                  (Rel. 34, Createq)
(Rel. 34, Last sequence update)
(Rel. 40, Last annotation update)
(Rel. 40, Merozoite
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                                                                                                                                                                                                                                                                                                                                                               Apicomplexa; Haemosporida;
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                                                 EMBL
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Malaria; Signal; Transmembrane;
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              Apical membrane
AMA-1.
   Plasmodium
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SN-----TTFLKPVATGNODLKDGGFAFP-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
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                                                                                                                                                          SDLMQEAEPSFWDEAEENIEQDGETHVMVEGDY
                                                                                                                                                                                                                                                                                                                                                                                         GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                                                   DNMKIIIASSAAVAVLATILMV-----YLYKR----KG-NAEKYDKMDQPQHYGKSTSR
                                                                                                                                                                                                        SNTALI----AGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRP
                                                                                                                                                                                                                                                                                                                        SMIKSAFLPTGAFKADRYKSHGKGYNWGNYNRETQ---KCEIFNVKPTCLINNSSYIATT
                                                                                                                                                                                                                                                                                                                                                                     GNCEDIPHVNEF---SANDLFECNKLVFELS--ASDQPKQYEQHLTDYEKIKEGFKNKNA
                                                                                                                                                                                                                                                                                                                                                                                                                                    VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK
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                                                                                                                                        NDEMLDPEASFWGEEK---RASHTTPVLMEKPY
                                                                                                                                                                                                                              LKCPCDPEMVSNSTCRFFVCK-----CVERRAEVTSNNEVVVKEEYKDEYADIPEHKPTY
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547
568
162
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422
                      (Rel. 15, Created)
(Rel. 15, Last sequence update)
(Rel. 40, Last annotation update)
(Rane antigen 1 precursor (Merozoite surface antigen).
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                                                                                 STANDARD;
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Pred. No. 8.9e-24;
0; Mismatches 214;
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APICAL MEMBRANE ANTIGEN 1.
                                                                                 PRT;
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NCBI_TaxID=5825;
[1]
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EMBL; A08270; CAA00765.1; -.
EMBL; U49745; AAB36511.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -I- FUNCTION: INVOLVED IN PARASITE INVASION OF ERYTHROCYTES
-I- SUBCELLULAR LOCATION: Type I membrane protein.
-I- SIMILARITY: STRONG TO AMA-1/PF83 FROM P.FALCIPARUM, P.F.
TO PK66 FROM P.KNOWLESI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=96333375; PubMed=8757869;
Crewther P.E., Matthew M.L., Flegg R.H., Anders R.F.;
"Protective immune responses to apical membrane antigen
Plasmodium chabaudi involve recognition of strain-specif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=90114335; PubMed=2608101; Marshall V.M., Peterson M.G., Lew "Structure of the apical membrane chabaudi.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=DS
                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS; PR01361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                epitopes.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                 Malaria;
                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF02430; AMA-1;
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147; Conser
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                                                                                                                   DRLPYRNNFLEDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPME----LLEKNSN
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                                                                                                                                                                                                                                                                                                                                                                                                  Signal;
                                                                                                                                          NPWE-----KFMEKYDIEKVHGSGIRVDLGEDARVENQDYRIPSGKCPVMGKGITIONS
NEEDNENOPFCFTPEKK-DEYKNLSYLTKNLRED---WETSCPNKSIQNAKFGVWVDGYC
                    KGEPPDLTWYCEKPRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRC
                                               ILALNDMSLCAKHA--SFYVPGTNVNTAYRHPAVYDKSNKTCYILYVAAQENMGPRYCS-
                                                                    IKASTDLGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSV
                                                                                             ----KVSFLTRVATGNQKVREGGLAFP-----QTDVNISPITIDNLKLMYKDHKE
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Pred. No. 5.9e
36; Mismatches
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CYTOPLASMIC (POTENTIAL)
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DEVELOPMENTAL STAGE, AND PHOSPHORYLATION.
MEDLINB-97405699; PubMed=9260743;
MA D., Nothias F., Boyne L.J., Fischer I.;
"Differential regulation of microtubule-associated in rat CNS and PNS during development.";
J. Neurosci. Res. 49:319-332(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 96-2459 FROM N.A., DOMAIN STRAIN=Sprague-Dawley; TISSUE-Brain, MEDLINE=92347374; PubMed=1639092;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-Sprague-Dawley; TISSUE-Tes
MEDLINE-96257242; PubMed-8666295;
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01-ARR-1990 (Rel. 14, Created)
16-CCT-2001 (Rel. 40, Last sequ)
28-FEB-2003 (Rel. 41, Last anno)
                                                                                                                                                                                                                                      Rienitz A., Grenningloh G., Hermans-Borgmeyer I., Littauer U.Z., Prior P., Gundelfinger E.D., Schmil Littauer U.Z., Schmil Protein of "Neuraxin, a novel putative structural protein of nervous system that is immunologically related to
                                                                                                                                                                                                                                                                                                                                             MEDLINE=90059871; PubMed=2555150;
                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Spinal cord;
                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 1541-2459 FROM N.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Zauner W., Kratz J., Staunton J., Feick P., "Identification of two distinct microtubule recombinant rat MAP 1B.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Isolation and sequencing associated protein (MAPIB) Gene 172:307-308(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
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MAPIB.
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Microtubule-associated protein 1B (MAP 1B) (Neuraxin) [Contains: MAP1
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                                                                                                                                                                                       8:2879-2888(1989).
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-!- INDUCTION: By nerve growth factor.
-!- DOMAIN: Has a highly basic region with many copies of the sequence KKEE and KKEI/V, repeated but not at fixed intervals, which is responsible for the binding of MAPIB to microtubules.
-!- PTM: LC1 is coexpressed with MAPIB. It is a polypeptide generated from MAPIB by proteolytic processing. It is free to associate with both MAPIA and MAPIB. It interacts with the amino-terminal region of MAPIB (By similarity).
-!- SIMILARITY: TO MAPIA.
-!- CAUTION: A C-terminal fragment of this protein (residues 1597 to 2459) was originally described as neuraxin in Ref. 3.
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EMBL; X60370; CAC16162.1;
EMBL; X16623; CAA34620.1;
PIR; A56577; A56577.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Eventhe European Bioinformatics Institute. There are no restrance to the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the company of the 
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                                                                                   SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Microtubules;
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PROSITE; PS00230; MAP1B_NEURAXIN; 8.
                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                              REPEAT
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SUBUNIT: 3 different light chains, LC1, LC2 and LC3, can associate with MAPIA and MAPIB proteins.

TISSUE SPECIFICITY: Nervous system (spinal cord, brain stem, cerebellum and cerebrum). Not expressed in liver, spleen, kidney,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEVELOPMENTAL STAGE: In cerebral
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                 Similarity
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                                                                                                                                                                                                                                                      1035
                 4.3%;
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                                                                            MAP18 10.
GLU-RICH.
LYS-RICH |
KKEE AND |
LYS-RICH.
M -> V (I)
T -> S (I
R -> K (I
L -> I (I
Score 127; DB
Pred. No. 0.27;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                       MAP18 1.

MAP18 2.

MAP18 3.

MAP18 4.

MAP18 5.

MAP18 6.

MAP18 7.
                                                                                                                                                                                                                                                                                               MAP1B
                                                                                                                                                                                                                                                                                                                     MAP1B
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(IN REF.
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                                                                                                                                                                                                            (HIGHLY BASIC,
KKEI/V REPEATS)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
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01-APR-1990 (Rel. 14, Last sequence update)
28-FEB-2003 (Rel. 41, Last sequence update)
Microcubule-associated protein 1B (MAP 1B) (M
[Contains: MAP1 light chain LCl].
MAP1B OR MTAP1B OR MTAP5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=Swiss Webster; TISSUE=Brain; MEDLINE=90094539; PubMed=2480963;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WEDLINGERVOYSTAND, Cowan N.J.;

NOble M., Lewis S.A., Cowan N.J.;

"The microtubule binding domain of microtubule-associated processes of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of the comparison of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                  Cell Biol. 109:3367-3376(1989).

FUNCTION: THE FUNCTION OF BRAIN MAPS IS ESSENTIALLY UNKNOWN PUNCTION: THE FUNCTION OF BRAIN MAPS IS ESSENTIALLY UNKNOWN PUNCTION. POSSIBLY MAPS BINDS TO A THAT ACCOMPANY NEURITE EXTENSION. POSSIBLY MAPS BINDS TO A TWO TUBULIN SUBUNITS IN THE POLYMER, AND THIS BRIDGING OF SWIGHT BE INVOLVED IN NUCLEATING MICROTUBULE POLYMERIZATION STABILIZING MICROTUBULES.
                                                                                                           SUBUNIT: 3 DIFFERENT LIGHT CHAINS, LC1, LC2 AND LC3, CAN ASSOCIATE WITH MAPIA AND MAPIB PROTEINS.

DOMAIN: Has a highly basic region with many copies of the sequence KKEE and KKEI/V, repeated but not at fixed intervals, which is responsible for the binding of MAPIB to microtubules.

PIM: LC1 IS COEXPRESSED WITH MAPIB. IT IS A POLYPEPTIDE GENERATED FROM MAPIB BY PROTEDLYTIC PROCESSING. IT IS FREE TO ASSOCIATE WITH BOTH MAPIA AND MAPIB. IT INTERACTS WITH THE AMINO-TERMINAL REGION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2122
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PROSITE; PS00230; MAP1B
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                                                                                       SEQUENCE
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Mammalia; !
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                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR000102; MAP1B neuraxin.
Pfam; PF00414; MAP1B neuraxin; 10.
PROSITE; PS00230; MAP1B NEURAXIN; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   GO; GO:0005875; C:microtubule associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=95104835; PubMed=7806212;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Jen L.L., Feener C., Fischbach N., Kunkel L.M.; Cloning of human microtubule-associated protein : Cloning of human microtubule-associated protein : Cloning of a related gene on chromosome 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN: Has a highly basic region with many copies of the sequence KKBE and KKBI/V, repeated but not at fixed intervals, which is responsible for the binding of AAPIB to microtubules. PTM: LCl is coexpressed with MAPIB. It is a polypeptide generated from MAPIB by proteolytic processing. It is free to associate with both MAPIA and MAPIB. It interacts with the amino-terminal region
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: THE FUNCTION OF BRAIN MAPS PHOSPHORYLATED MAP1B MAY PLAY A ROLE THAT ACCOMPANY NEURITE EXTENSION. POS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY: TO MAPIA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUBUNIT: 3 DIFFERENT LIGHT CHAINS, LC1, WITH MAP1A AND MAP1B PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TWO TUBULIN SUBUNITS IN THE POLYMER, AND THE MIGHT BE INVOLVED IN NUCLEATING MICROTUBULE STABILIZING MICROTUBULES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      of MAP1B (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          157129;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HGNC:6836; MAP1B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22:273-280(1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ens (Human)
; Metazoa;
Eutheria;
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                                                                                                                               1878
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(Rel.
(Rel.
        Conservative
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32, Last sequence update)
40, Last annotation update)
(MAP 1B) [C
                                                                                                                               1894
1911
1928
1945
1962
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2047
2064
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Primates;
                         4.0%;
                                                                                                                                                                                                                                                                                                                                                     Phosphorylation
MAP1 LIG
                                                                                       270618
          66;
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Pred. No. 1.3,
6; Mismatches
                                                                                                                                                                                       MAP18
MAP18
MAP18
MAP18
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MAP18
MAP18
                                                                                                      LYS-RICH
KKEE AND
                                                                                                                                               MAP1B
MAP1B
                             Score 118;
Pred. No.
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OLE IN THE CYTOSKELETAL CHANGES
POSSIBLY MAP1B BINDS TO AT LEAST
ER, AND THIS BRIDGING OF SUBUNITS
                                                                                                            KKEI/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        oved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
                                                                                                        (HIGHLY BASIC, KKEI/V REPEATS)
                                                                                                                                                                                                                                                                                                                                                   CHAIN
                             .3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                   complex;
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          222;
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                                           Length 2468;
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          Indels
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RESULT 12
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                                                                                                                                                                                                                                          SM2A_SCHGR
Q9XZC8;
          growth cone guidance in vivo."
Development 126:2007-2019(1999)
                                                                                                                         Eukaryota; Metazoa; Arthropoda; Hexapoda; Insecta;
Neoptera; Orthopteroidea; Orthoptera; Caelifera; A
Acridoidea; Acrididae; Cyrtacanthacridinae; Schist
                                  Isbister C.M., Tsai A., Wong S.T., Kolodkin A.! "Discrete roles for secreted and transmembrane
                                                             MEDLINE=99203450; PubMed=10101134;
                                                                                                                                                               Schistocerca gregaria (Desert locust).
                                                                                                                                                                              SEMA-2A.
                                                                                                                                                                                                                 30-MAY-2000
30-MAY-2000
                                                                                      SEQUENCE
                                                                                                                                                                                      30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation updat
Semaphorin 2A precursor (Sema 2A) (Sema II)
                                                                       SSUE=Embryo
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                                                                                                                                                                                                                                                                                                                                               ODGET
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                                                                                                                      Caelifera; Acridomo
dinae; Schistocerca.
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                                               A.L.,
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MOLECULE CRITICAL
                                   semaphorins
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SMART; SM00409; IG; 1.
SMART; SM00630; Sema; 1.
PROSITE; PS50835; IG_LIKE; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AF134904; AAD30114.1; -.
InterPro; IPR007110; Ig-like.
InterPro; IPR003599; Ig.
InterPro; IPR001627; Sema.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the EN
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SIGNAL
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SIMILARITY: Contains 1 Sema domain.
SIMILARITY: Contains 1 immunoglobulin-like C2-type
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AXON FASCICULATION AND FOR DETERMINING BOTH THE INITIAL DIRECTION AND SUBSEQUENT PATHFINDING EVENTS OF THE TI AXON PROJECTION. SUBCELLULAR LOCATION: Secreted (Potential).
TISSUE SPECIFICITY: EXPRESSED IN A GRADIENT IN THE DEVELOPING LIME BUD EPITHELIUM DURING TI PIONEER AXON OUTGROWTH.
SIMILARITY: BELONGS TO THE SEMAPHORIN FAMILY.
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                                                                                                                                                                                                                                                                                                                                                                                               Similarity
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                                                                                                                                                                                                                                    GFNLNFV--
                                                                                                                                                                                                                                                              NAHSPKDWV-VYSNLTHLQRHEYVPGIGVGIAKCPFDPEDSSTAVWVENGNPGDLPGLYS
                                                                                                                                                                                                                                                                                         LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKE-----YKQSGNP--LPG---
                                                                                                                                                                                                                                                                                                                        TNISLSDCERDSLTLEPTNI-----ANCVSKGKSADFDCKNHIRVIQPMGDGSRLYICGT
                                                                                                                                                                                                                                                                                                                                                  SGLSSSTRSRESQTLSASTSGNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGT
PLTSQASWNDWWPLHQSDQPHSGG----
                                                                                      -- FYFNEIQGVYKMPNTDKFFGVFSTSVTGLTGSAICSFTLKDIQEVFSGKFKEQATSS-
                                                                                                                 TWYCFKPRKSV--
                                                                                                                                            RETAVEYINCGKS-----VYSRVARVCKKDVGGKNILSQNWATFLKARLNCSIPGEFP--
                                                                                                                                                                                                      GTNAEFTKADTVIFRTDLYNLTTGRREYSFKRTLKYDSKWLDNPNFVGSFDVGEYVLFFF
                            --SAWLPVLPSRVPDPRPGECVNDTELLPDTVLNFIRSH--
                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                         78673 MW;
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                                                        KKGRCLDYTE-LTDTVIERVESKAQCWVKTFENDGVASDQPHTY
                                                                                                                   TENHILI YGSAYVG
                                                                                                                                                                                                                                   ----TPSGQRISPFPMELLE----KNSNIKASTDLGRCAEFAF
                                                                                                                                                                                                                                                                                                                                                                                 63;
                                                                                                                                                                                                                                                                                                                                                                                Score 117; DB
Pred. No. 0.29
63; Mismatches
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BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEMA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                         7FE55AB4A965E1E4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (GLCNAC. .
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.29;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Developmental protein;
                                                                                                                                                                                                                                                                                                                                                                                                           Length
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                                                                                                                                                                                                                                                                                                                                                                                                              697;
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   VGRN--YGFYYVD
                                                                                                                                                                                                                                                                                                                                                                                 184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a collaboration
                                                                                                                                                                                                                                                                                                                                                                                 Gaps
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RESULT 13
ALGERTAL CONSTRUCTION OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW PROCESS OF THE FEW
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Q9N2I7;
                        DOMAIN
TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Immunogenetics 50:366-368(1999).

- FUNCTION: Removes N-terminal dipeptides sequentially from polypeptides having unsubstituted N-termini provided that the polypeptides having unsubstituted N-termini provided that the penultimate residue is proline (By similarity).

- CATALYTIC ACTIVITY: Release of an N-terminal dipeptide, xaa-Xbb-|
- CATALYTIC ACTIVITY: Release of an N-terminal dipeptide, provided xcc, from a polypeptide, preferentially when Xbb is Pro, provided Xcc is neither Pro nor hydroxyproline.

- Is SUBCULTI. Homodimer (By similarity).

- Is SUBCULTILAR LOCATION: Type II membrane protein. Also exists in a soluble form (By similarity).

- PIM: The soluble form (SDPP) derives from the membrane form (MDPP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Peripheral blood;
MEDLINE=20094000; PubMed=10630304;
Mishimura Y., Miyazawa T., Ikeda Y., Izumiya Y., Nakamura
Mikami T., Takahashi E.;
"Molecular cloning and sequencing of a cDNA encoding the
activation antigen CD26 homologue.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Felis silvestris catus (Cat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Mammalia; Eutheria; Carnivora; Fissipedia; Felidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FELCA
                                                                                                             CHAIN
                                                                                                                                                                                              PROSITE; PS00708; PRO ENDOPEP SER; 1.
Hydrolase; Aminopeptidase; Dipeptidase; Serine protease;
Transmembrane; Glycoprotein; Signal-anchor.
                                                                                                                                                                                                                                                                                                                    Pfam;
                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             the European Bioinformatics Institute. The use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9685;
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28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Dipeptidyl peptidase IV (EC.3.4.14.5) (DPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entities requires a license agreement (S
or send an email to license@isb-sib.ch).

    -!- SIMILARITY: Belongs to peptidase family S9B.

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                                                                                                                                                                           CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEROPS; S09.003;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AB023952; BAA92344.1; -.
                                                                                                                                                                                                                                                                                                                                                         InterPro;
                                                                                                                                                                                                                                                                                                                                                                                     InterPro;
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                                                                                                                                                                                                                                                                                        Pro; IPR002469; DPPIV N_term.
Pro; IPR001375; Peptidase S9.
Pro; IPR002471; Pro1 endopep ser.
Pro; IPR003379; Ser_estrs site.
Pr00930; DPPIV N_term; 1.
PP00326; Peptidase S9; 1.
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                                                                                                                                                                              Glycoprotein;
1 765
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29 6.
                        CYTOPLASMIC (I
SIGNAL-ANCHOR
                                                                                    DIPEPTIDYL PEPTIDASE IV (SDPP) (BY SIMILARITY)
                                                                                                                                                                           DIPEPTIDYL PEPTIDASE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ₿
                               (TYPE-II MEMBRANE PROTEIN)
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Felis.
                                                                                                                      SOLUBLE
                                                                                                                                                                                 MEMBRANE FORM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for
                                                                                                                      FORM
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RESULT 14
SORL_CHICK
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Best Local
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                                                     SORL CHICK
Q98930;
16-OCT-2001
16-OCT-2001
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CARBOHYD
16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
Sortilin-related receptor (Sorting protein-related receptor containing
LDLR class A repeats) (SorLA) (SorLA-1) (Low-density lipoprotein
receptor relative with 11 ligand-binding repeats) (LDLR relative with
11 ligand-binding repeats) (LR11) (Fragment).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MGLVGVQVLL-VLVADCTIFASGLSSSTRSRESQTLSASTSGNPFQANVEMKTFMERFNL
                                                                                                                                                                                WVGRFRP----AEPHFTSDGRNFYKIISNEDGYKHI
                                                                                                                                                                                                                                                                                                                 PNFI PSNPSVTPPTPETALQCT--ADKFPDSFGACDVQACKRQKTSCVG-GQIQSTSVD
                                                                                                                                                                                                                                                                                                                                                                                                       SALWWSPKGTFLAYAQFNDTQVPLIEY-----SFYSDESLQYPMTMR-----
                                                                                                                                                                                                                                                               CTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNN--FLEDVPTE
                                                                                                                                                                                                           -ARKKRPSDLMQEAEPSFWDEAEENIE----QDGETHV
                                                                                                                                                                                                                                      DIRDYNNSTG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -YNYVKOWRHSYTASYDIYDLNKR-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LGLLGLAALITIITVPVVLLNKGNDAAADSRRTYTLTDYLK-NTFR----VKFYSLRWVS
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                                                                                                             STANDARD;
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  RX MEDLINE=9730165; PubMed=9157966;
RX MEDLINE=97301565; PubMed=9157966;
RA Morwald S., Yamazaki H., Bujo H., Kusunoki J., Kanaki T., Seimiya K.,
RA Morisaki N., Nimpf J., Schneider W.J., Saito Y.;
RA Morisaki N., Nimpf J., Schneider W.J., Saito Y.;
RY Morisaki N., Nimpf J., Schneider W.J., Saito Y.;
RT Green Containing LDL receptor elements is highly
RT Conserved in humans and chickens.";
RT A novel mosaic protein containing LDL receptor elements is highly
RT Conserved in humans and chickens.";
RT CONSERVED CONTENSION THAT ENDOCYTIC RECEPTOR, THAT
CC MAY BE IMPLICATED IN THE UPTAKE OF LIPOPROTEINS AND OF PROTESSES.
CC MAY BE IMPLICATED IN THE UPTAKE OF LIPOPROTEIN OF PLASMA,
CC MAY BE IMPLICATED IN THE UPTAKE OF LIPOPROTEIN OF PLASMA,
CC AND TRANSPORTS IT INTO CELLS BY ENDOCYTOSIS. BINDS THE RECEPTOR-
CC ASSOCIATED PROTEIN (RAP). COULD PLAY A ROLE IN CELL-CELL
CC ASSOCIATED PROTEIN (RAP). COULD PLAY A ROLE IN CELL-CELL
CC INTERACTION. BOTH ESTROGEN STATUS AND CHOLESTEROL LEVELS LACK
CC REGULATORY EFFECTS ON THIS RECEPTOR.
CC -!- SUBCELLULAR LOCATION: Type I membrane protein (Potential).
CC -!- SIMILARITY: Contains 5 BNR repeats.
CC -!- SIMILARITY: Contains 5 BNR repeats.
CC -!- SIMILARITY: Contains 1 LGF-like domain.
CC -!- SIMILARITY: Contains 2 fibronectin type III domains.
CC -!- SIMILARITY: Contains 2 fibronectin type III domains.
CC -!- SIMILARITY: Contains 2 fibronectin type III domains.
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PROSITE; PS01209; LDLRA 1; 11.

PROSITE; PS50068; LDLRA 2; 11.

Endocytosis; Receptor; EGF-like
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Lipid transp
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Eukaryota; Metazoa; Chor
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InterPro; IPR002860;
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n; PF00041; fn3; 1.
n; PF00057; ldl recept a; 11
m; PF00058; ldl recept b; 5.
NTS; PR00266; LDLARCEPTOR.
RT; SM00181; EGF; 1.
RT; SM00060; FN3; 1.
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P01130; 1AJJ.
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SM00135;
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Veognathae; Galliformes; Phasianidae; Phasiani
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metabolism.
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ID P56202;

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P56202;
01-NOV-1997
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Cathepsin W
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Brown J., Matutes
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MIM; 602364; -..

GO; GO:0008234; F:cysteine-type peptidase ac
GO; GO:0006955; P:immune response; TAS.

InterPro; IPR000668; Peptidase C1.

InterPro; IPR000169; SHprot_acsite.

pfam; pF00112; Peptidase_C1; 1.

PRINTS; PR00705; PAPAIN.

ProDom; PD000158; Peptidase_C1; 1.

SMART; SM00645; Pept C1; 1.

SMART; SM00645; Pept C1; 1.

PROSITE; PS00139; THIOL_PROTEASE_CYS; FALSE_PROSITE; PS00639; THIOL_PROTEASE_ASN; 1.

PROSITE; PS00640; THIOL_PROTEASE_ASN; 1.

Hydrolase; Thiol protease; Glycoprotein; Sig
SIGNAL 21
PROPEP 22 127
CHAIN 128 376 CATHEPSIN W.
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Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
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-I- FUNCTION: MAY HAVE A SPECIFIC FUNCTION IN THE MECHANISM REGULATION OF T-CELL CYTOLYTIC ACTIVITY.
-I- TISSUE SPECIFICITY: EXPRESSED IN NATURAL KILLER AND CYTO
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MEDLINE=98342076; PubMed=9675123;

Wex T., Levy B., Smeekens S.P., Ansorge S., Desnick R.J., Brown School Control of the Structure, chromosomal localization, and expression cathepsin W.";

Cathepsin W.";
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MEDLINE=97261885; PubMed=9108299;

Linnevers C., Smeekens S.P., Broemme D.;

"Human cathepsin W, a putative cysteine
expressed in CD8+ T-lymphocytes.";

FEBS Lett. 405:253-259(1997).
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Leukemia 12:1771-1781(1998).
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Genew; HGNC:2546; CTSW.
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EMBL; AF015954; AAB82457.1; -.
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Q12986;
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MEDLINE=99432238;
                                                         Song Z., Krishna S., Thanos D., Strominger J.L., Ono S.J.;
"A novel cysteine-rich sequence-specific DNA-binding protein interacts with the conserved X-box motif of the human major histocompatibility complex class II genes via a repeated Cys-His domain and functions as a transcriptional repressor.";
J. Exp. Med. 180:1763-1774(1994).
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MEDLINE=95053707; PubMed=7964459;
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Mammalia; Eutheria; Primates;
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SMART; SM00184; ZHP NFX; 9.
SMART; SM00438; ZHP NFX; 9.
SMART; SM00438; ZF_RING_1; FALSE_NEG.
PROSITE; PS00518; ZF_RING_2; 1.
Thl conjugation pathway; Ligase; Transcription regulation;
Thl conjugation pathway; Ligase; Transcription regulation;
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Weissman A.M.;
"RING fingers m
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF01424; R3H; 1.
Pfam; PF00097; zf-C3HC4; 1.
Pfam; PF01422; zf-NF-X1; 8.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ubiquitination.";
Proc. Natl. Acad. Sci. U.S.A. 96:11364-11369(1999).
-!- FUNCTION: Repressor of HLA-DRA transcription. Binds motif of MHC class II genes. May play an important 1
                                                                                                                                                                                                                                                                                                                                                                                                                   REPEAT
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GO; GO:0006954; P:inflammatory response;
GO; GO:0000122; P:negative regulation of
GO; GO:0006366; P:transcription from Pol
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIX,
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Genew; HGNC:7803; NFX1.
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PIR; I38869; I38869.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001374;
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DOWAIN: The RING-type zinc finger oubiquitin-conjugating enzyme (E2) of SIMILARITY: Contains 1 RING-type z SIMILARITY: Contains 1 R3H domain.
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                                                                                                                                                                                                            Score 107.5;
Pred. No. 2.
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zinc finger.
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X MEDLINE=9602/755; PubMed=7546292;
A GOUGH N.R., Hatem C.L., Fambrough D.M.;
A GOUGH N.R., LAMP-2 proteins arises by alternative splicing from
T "The family of LAMP-2 proteins arises by alternative splicing from
T single gene: characterization of the avian LAMP-2 gene and
T identification of mammalian homologs of LAMP-2b and LAMP-2c.";
DNA Cell Biol. 14:863-867(1995).
C --- FUNCTION: IMPLICATED IN TUMOR CELL METASTASIS. MAY FUNCTION IN
C ---- FUNCTION OF THE LYSOSOMAL MEMBRANE FROM AUTODIGESTION,
MAINTENDANCE OF THE ACIDIC ENVIRONMENT OF THE LYSOSOME, ADHESIC
C MHEN EXPRESSED ON THE CELL SURPACE (PLASMA MEMBRANE), AND INTERCELLULAR SIGNAL TRANSDUCTION.
C ---- SUBCELLULAR LOCATION: Type I membrane protein. Lysosomal. THIS
                                                                                                                                                                                                                                                                                                         MEDLINE=90202978; PubMed=2318880; Cha Y., Holland S.M., August J.T.; "The cDNA sequence of mouse LAMP-2. Lysosomal membrane glycoproteins."; J. Biol. Chem. 265:5008-5013(1990).
                                                                                                                                                                                                   "Characterization and cloning of lgp110, glycoprotein from mouse and rat cells."; J. Biol. Chem. 265:12036-12043(1990).
                                                                                                                                                                                                                                                   SEQUENCE OF 58-128 AND 186-415 FROM MEDLINE=90307738; PubMed=2142158; Granger B.L., Green S.A., Gabel C.A.
                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse).
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                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=10090;
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LAMP2 OR LAMP-2
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(Rel. 41, Last annotation update)
sociated membrane glycoprotein 2 precursor
membrane glycoprotein-type B) (LGP-B) (CD10
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Rodentia;
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Sciurognathi;
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thi; Muridae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for contents
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Pfam; PF01299; Lamp; 1.
PRINTS; PR00336; LYSASSOCTDMP.
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ALTERNATIVE PRODUCTS:
Event=Alternative spl
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MGI:96748; Lamp2.
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/FIG-VSP 003045
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Granger B.L. Helenius A.;

TISSUE=Brain; ALTERNATIVE

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Matches 71
                                                                    Yamazaki A., Yammada S.;

Hayashi H., Hamada S.;

"The genome of invasive Streptococcus pyogenes; a comparative analysis of S. pyogenes SSI-1, SP370 and MGAS8232.";

Submitted (MAY-2002) to the EMBL/GenBank/DDBJ databases.

Submitted (MAY-2002) to the EMBL/GenBank/DDBJ TALABASE THE TRANSCRIPTION CONTRACTORY THE TRANSCRIPTION TRANSCRIPTION TO THE FOUR RIBONUCLEOSIDE TRIPHOSPHATES AS
                                                                                                                                                                                                                                                  STRAIN=MGAS315 / Serotype_M3;
MEDLINE=22133808; PubMed=12122206;
Beres S. B., Sylva G.L., Barbian K.D., Lei B., Hoff J.S.,
Beres S. B., Sylva G.L., Barbian K.D., Lei B., Hoff J.S.,
Campbell D.S., Smith T.M., McCormick J.K., Leung D.Y.M.,
Schlievert P.M., Musser J.M.;
"Genome sequence of a serotype M3 strain of group A Streptococcus:
phage-encoded toxins, the high-virulence phenotype, and clone
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-FEB-2003
28-FEB-2003
15-SEP-2003
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28-FEB-2003 (Rel. 41, Last sequence update)
28-FEB-2003 (Rel. 42, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
bNA-directed RNA polymerase beta' chain (EC 2.7.7.6) (Tr
beta' chain) (RNA polymerase beta' subunit).
RPOC OR SPYM3_0076 OR SPS0077.
Streptococcus pyogenes (serotype M3).
Bacteria; Firmicutes; Lactobacillales; Streptococcaceae;
                                                                 ÷
                                                                                                                                                                STRAIN=SSI-1 / Serotype M3;
Nakagawa I., Kurokawa K., Nakata M., Tomiyasu Y., Ya
Yamazaki K., Okahashi N., Kawabata S., Yasunaga T.,
                                                                                                                                                                                         STRAIN=SSI-1 /
                                                                                                                                                                                                                                            emergence.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q8K8W2;
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              {RNA}(N)
SUBUNIT: THE ENZYME CONSISTS OF THE ENZYME WHICH IS COMPOSED OF 2 ALPHA BETA' CHAIN.
                                                        SUBSTRATES.
CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate
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RESULT 19
RPOC STRPY
ID RPOC STRPY
AC P95816;
DT 15-DEC-1998 |
DT 16-OCT-2001 |
DT 16-OCT-2001 |
DE DNA-directed
DE beta' chain)
GN RPOC OR SPYOC
OS Streptococcus
OC Bacteria; Fiz
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Best Local
                                  P95816;
15-DEC-1998 (Rel. 37, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
16-OCT-2001 (Rel. 40, Last annotation update)
DNA-directed RNA polymerase beta' chain (EC 2
  Bacteria; Firmicutes;
                            RPOC OR SPY0099
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pyogenes

Lactobacillales; Streptococcaceae;

2.7.7.6) (Transcriptase

STANDARD;

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InterPro; IPR006592; RNA_Dol_N.
Pfam; PF04997; RNA_Dol_Rpb1 1; 1.
Pfam; PF04983; RNA_Dol_Rpb1 2; 1.
Pfam; PF04983; RNA_Dol_Rpb1 3; 1.
Pfam; PF04983; RNA_Dol_Rpb1 4; 1.
Pfam; PF04989; RNA_Dol_Rpb1 4; 1.
Pfam; PF04989; RNA_Dol_Rpb1 5; 1.
SMART; SM00663; RPOLA_N; 1.
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InterPro; IPR000722; RNA_pol_A.
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91; Conserv
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DNKABI I DAAHHRVEE I NKAFRRGLMTDDDRYVAVTTTWREAKEALEK
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Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE OF 67-1056 FROM STRAIN=NCDO 923;
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NCBI_TaxID=1314;
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Primeaux C., Sezate S., Suvorova, S., Lai H.S., Lin
Qian Y., Jia H.G., Najar F.Z., Ren O., Zhu H., Song L., White
Yuan X., Clifton S.W., Roe B.A., McLaughlin R.;
                                                                                                                                                                                               SMART;
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arpro; IPR0007080; RNA pol Rpbl 1.

arpro; IPR007080; RNA pol Rpbl 3.

arpro; IPR007083; RNA pol Rpbl 4.

arpro; IPR007081; RNA pol Rpbl 5.

arpro; IPR006592; RNA pol Rpbl 1.

m; PF04997; RNA pol Rpbl 1.

m; PF04983; RNA pol Rpbl 2: 1.

m; PF04983; RNA pol Rpbl 3: 1.

m; PF04983; RNA pol Rpbl 4: 1.

m; PF04983; RNA pol Rpbl 3: 1.

m; PF04983; RNA pol Rpbl 3: 1.

m; PF04984; RNA pol Rpbl 4: 1.

m; PF04985; RNA pol Rpbl 5: 1.

RT; SM00663; RPDLA N; 1.
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CATALYTIC ACTIVITY: N nucleoside
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J. SYST. BACTETIOI. 46:1004-1009(1996).

FUNCTION: DNA-DEPENDENT RNA POLYMERASE CATALYZES THE TRANSCRIPTION
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FUNCTION: DNA-DEPENDENT RNA POLYMERASE CATALYZES THE TRANSCRIPTION
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BETA' CHAIN.
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              Similarity
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the Swiss Institute of Bioinformatics
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              Pred.
                         Score 104;
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13-AUG-1987 (Rel. 05, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Receptor protein-tyrosine kinase erbB-2 precu
(p185erbB2) (NEU proto-oncogene) (C-erbB-2) (
"A v-erbB-related protooncogene, c-erbB-2, is dist: c-erbB-1/epidermal growth factor-receptor gene and human salivary gland adenocarcinoma.", proc. Natl. Acad. Sci. U.S.A. 82:6497-6501(1985).
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P04626;
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                                                                                                                                      Coussens L., Yang-Feng T.L., Liao Y.
McGrath J., Seeburg P.H., Libermann
Francke U., Levinson A., Ullrich A.,
                                                                                                                                                                                                                            Yamamoto T., Ikawa S., Akiyama T.,
Saito T., Toyoshima K.,
Saitiarity of protein encoded by t
epidermal growth factor receptor.",
                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa;
                                                                                                                                                                                                                                                                                                                                                                       surface receptor ERBB2 OR HER2 OR
                                                 MEDLINE=86016729;
Semba K., Kamata N
                                                                                                  "Tyrosine kinase receptor with extensive homology shares chromosomal location with neu oncogene."; Sciende 230:1132-1139(1985).
                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
MEDLINE=86118663; PubMed=3003577;
Themas . Akiyama T.,
                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human)
                                                                                                                                                                             MEDLINE=86070181; PubMed=2999974;
                                                                                                                                                                                           SEQUENCE FROM
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                                                  Kamata N.,
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                                                                          737-1031 FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                    proto-oncogene)
HER2) (MLN 19).
                                                 PubMed=2995967;
N., Toyoshima K.,
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Primates;
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Catarrhini; Hominidae
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R GO; GO:0005012; F:Neu/ErbB-2 receptor activity; TAS.
GO; GO:0004716; F:receptor signaling protein tyrosine kinase
R GO; GO:0004716; F:receptor signaling protein tyrosine kinase
GO; GO:0006483; P:cell proliferation; TAS.
R GO; GO:0006489; P:protein amino acid dephosphorylation; TAS.
R GO; GO:0006470; P:protein amino acid phosphorylation; TAS.
R Interpro; IPR006211; Furin-Tike.
R Interpro; IPR000719; Prot Kinase.
R Interpro; IPR001245; Tyr pkinase.
R Interpro; IPR001245; Tyr pkinase.
R Interpro; IPR001245; Tyr pkinase.
R Interpro; IPR004019; YLP motif.
R Interpro; IPR004019; YLP motif.
R Pfam; PF00757; Furin-like; 1.
R Pfam; PF00757; Furin-like; 1.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; YLP; Z.
R Pfam; PF00757; PNOTEIN KINASE ATP; 1.
R PROSITE; PS00107; PROTEIN KINASE ATP; 1.
R PROSITE; PS00107; PROTEIN KINASE ATP; 1.
R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
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R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
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R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
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R PROSITE; PS00101; PROTEIN KINASE ATP; 1.
R PROSITE; PS00101; 
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EMBL; M11761; AAA35808.1; JOINED.
EMBL; M11763; AAA35808.1; JOINED.
EMBL; M11763; AAA35808.1; JOINED.
EMBL; M11764; AAA35808.1; JOINED.
EMBL; M11765; AAA35808.1; JOINED.
EMBL; M11766; AAA35808.1; JOINED.
EMBL; M12036; AAA35808.1; JOINED.
EMBL; M12036; AAA35808.1; -.
EMBL; M30363; CAA27560.1; -.
EMBL; X03363; CAA2760.1; -.
EMBL; X03363; CAA2760.1; -.
EMBL; X034571; A24571.
PDB; 10R1; 01-JAN-00.
Genew; HGNC:3430; ERBB2.
MIM; 164870; -.
GO; GO:000471; F:receptor signalin
GO; GO:0007471; F:receptor signalin
GO; GO:0007471; P:protein amino aci
GO; GO:0006478; P:protein amino aci
GO; GO:0006478; P:protein amino aci
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VARIANTS VAL-654 AND VAL-655.
MEDLINE=93194196; PubMed=8095488;
MEDLINE=93194196; PubMed=8.055.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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Genomics 15:426-429(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ehsani A., Low J., Wallace R.B., Wu A.M., "Characterization of a new allele of the specific competition hybridization.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        tyrosine phosphate.

SUBUNIT: Heterodimer with each of the other ERBB receptors (Potential). Interacts with PRKCABP (By similarity).

SUBCELLULAR LOCATION: Type I membrane protein.

PTM: Ligand-binding increases phosphorylation on tyrosine residues (By similarity).

PDLYMORPHISM: There are fours alleles due to the variations positions 654 and 655, Allele B1 (654-Ile-Ile-655) has a frequency of 0.782; allele B2 (654-Ile-Val-655) has a frequency of 0.282; allele B3 (654-Val-Val-655) has a frequency of 0.281 allele B3 (654-Val-Val-655) has a frequency of 0.282 allele B3 (654-Val-Val-655) has a frequency of 0.282 allele B3 (654-Val-Val-655) has a frequency of 0.282 allele B3 (654-Val-Val-655) has a frequency of 0.283 EMILARITY: BELONGS TO THE EGF RECEPTOR FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 potential ligand for this receptor. Not activated by EGF, realpha and amphiregulin.

CATALYTIC ACTIVITY: ATP + a protein tyrosine = ADP + protein
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            family; Receptor; Signal;
ATP-binding; Phosphorylation;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      human
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                                                                                                                                298
                                                                                                                                               138
                                                                                                                                                                                               108;
                                                                                                                                                                               81 LYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKEYKQSGNPLPGG---FNLNFVT
                                                                                                                                                                                                      Similarity
RPEDECVGEGLACHQLCARGHCWGPGPTQCVNCSQFLRGQECVEECRVLQGLPREYVNAR
                               L--RELGSGLALIHHNTHLCFVHT----
                                                                                                              KKRLCH-----ILYVSMQLMEGKKYC-----
                                                                                                                                AC-----
                                                                                                                                              PSGQRISPFPMELLEKNSNIKASTDLGRCAEFA----FKTVAMDKNNKATKYRYPFVYDS
                                                                                                                                                               LHFNHSGIC-----PEGRYTFGASCVT
               OPHSGGVGRNYGFYYVDTTGE-----GKCALSDQ-----
                                                               QVFETLEEITGYLYISAWPDSLPDLSVFQNLQVIRGRILHNGAYSLTLQGLGISWLGLRS
                                                                               SVTENHHLIYGSAYVGENPDAF--ISKCPN-QALRG---
                                              LDYTELTDTVIERVESKAQCWVKTFENDGVASDQ----
                                                                                               --RVCYGLGMEHLREVRAVTSANIQEFAGCKKIFGSLAFLPESFDGDPASNTAPLQPEQL
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259
530
571
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ATP (BY SIMILARITY).
ATP (BY SIMILARITY).
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CYTOPLASMIC
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SIMILARITY
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Mismatches
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                                                                                                                                                                                                                              39E9DFDA04DCF962 CRC64;
                              -VPWDQLFRNPH----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROTEIN-TYROSINE KINASE ERBB-2
                                                                                                                                                                                                              DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                               174;
                                                                                                                                                                                                                                                                                                                                      (AUTO-)
                                              -PHTYPLTSQASWNDWWPLHQSD
                                                                                                                                                                                                              Length 1255;
                                                                               -----YRFGV-WKKGRC
                                                                                                                                                                                               Indels 156;
               -VPDCLVSDSAAVSYTAAG
                                                                                                               SVKGEPPDLTWYCFKPRK
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(BY SIMILARITY).
(POTENTIAL).
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(POTENTIAL).
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FBN1_HUMAN
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CHARACTERIZATION.
CHARACTERIZATION.
MEDLINE=91317849; PubMed=1860873;
MEDLINE=91317849; PubMed=1860873;
Sakai L.Y., Keene D.R., Glanville R.W., Bachinger H.P.;
"Purification and partial characterization of fibrillin, a cysteine-
rich structural component of connective tissue microfibrils.";
T siol. Chem. 266:14763-14770(1991).
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Fibrillin 1
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TISSUE-Fibroblast, and Placenta;
MEDLINE-94010947; PubMed=7691719;
Corson G.M., Chalberg S.C., Dietz H.C., Charbonneau N.L.,
"Fibrillin binds calcium and is coded by cDNAs that reveal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=93372860; PubMed=8364578; Pereira L.V., D'Alessio M., Ramirez F. Pangilinan T., Bonadio J.; Pangilinan T., Bonadio J.; Grandinan T., Bonadio J.; Grandinan T., Bonadio f the sequence defective gene product in Marfan syndium. Mol. Genet. 2:961-968(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=91304568; PubMed=1852207;
Maslen C.L., Corson G.M., Maddox B.K.,
"Partial sequence of a candidate gene
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                     STRUCTURE BY NMR OF 2054-2125.
MEDLINE=98031893, PubMed=9362480;
Yuan X., Downing A.K., Knott V., Handfor
"Solution structure of the transforming
protein-like module, a domain associated
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MEDLINE=91304567; PubMed=1852206;
Lee B. Godfrey M. Vitale E., Hori H.,
Tsipouras P., Ramirez F., Hollister D.W.
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"Linkage of Marfan syndrome and a phenotypically
two different fibrillin genes.";
Nature 352:330-334(1991).
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Downing A.K., Knott
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"Calcium binding properties of a pair from human fibrillin-1.";
J. Mol. Biol 255.22
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Cell 85:
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Dietz H.C., Cutting G.R., Pyeritz R.E., Maslen C.L., Saka Corson G.M., Puffenberger E.G., Hamosh A., Nanthakumar E. Curristin S.M., Stetten G., Meyers D.A., Francomano C.A.; "Marfan syndrome caused by a recurrent de novo missense m the fibrillin gene.";
Nature 352:337-339(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Collod-Beroud G., Beroud C., Ades L., Black C., Godfrey M., Hayward C., Karttunen L., Milewicz I Richards R.I., Wang W., Junien C., Boileau C.; "Marfan Database (second edition): software and analysis of mutations in the human FBN1 gene.";
                                                                                                                                                                                                                                                                                                                                                                                    Hayward C., Brock D.J.L "Fibrillin-1 mutations fibrillinopathies.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=96174615; PubMed=8594563; Collod G., Beroud C., Soussi T., "Software and database for the an
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MEDLINE=91304569; Pu
Dietz H.C., Cutting
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Collod-Beroud G.,
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genetic disorders.";
Cell 85:597-605(1996).
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                                                                                                                  Dietz H.C., Pyeritz R.E., Puffenberger E.G., Kent Corson G.M., Maslen C.L., Sakai L.Y., Francomano "Marfan phenotype variability in a family segregamutation in the epidermal growth factor-like motions."
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MEDLINE=94314977; PubMed=8040326; Stahl-Hallengren C., Ukkonen T., Saxne T., Tornqvist K., Peltonen
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                  MEDLINE=99184368; PubMed=8136837;
Kainulainen K., Karttunen L., Puhakka L., Sakai I
"Mutations in the fibrillin gene responsible for 
lentis and neonatal Marfan syndrome.";
                                                                    VARIANTS MFS GLY-217; ASN-1023; ARG-1074; GLU-2127; TRP-2151; LYS-2447 AND ARG-2511.
                                                                                                                                                                                                                     MEDLINE=94351682; PubMed=8071963;
Hewett D.R., Lynch J.R., Child A.
"A new missense mutation of fibri
                                                                                                                                                                                                                                                                                  "An extra cysteine in one of the non-calcium-binding factor-like motifs of the FBN1 polypeptide is connect variant of Marfan syndrome.";
J. Clin. Invest. 94:709-713(1994).
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Hayward C., Rae A.L., Porteous M.E.M., Logie L.J., Brown on the fibrilin gene (FBN1): SSCP screening of exons syndrome patients.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "A novel mutation of the fibrillin Genomics 19:573-576(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=94245249; PubMed=8188302;
Lonnqvist L., Child A., Kainulainen
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"A compound-heterozygous Marfan patient:
alleles result in a lethal phenotype.",
Am. J. Hum. Genet. 55:1083-1091(1994).
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Tynan K., Comeau K., Pearson M., Wilgenbus
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"A novel fibrillin mutation in the Marfan syndrome disrupt calcium binding of the epidermal growth fac Hum. Mol. Genet. 2:475-477(1993).
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VARIANTS MFS SER-2144.
MEDLINE=93278402; PubMed=8504310;
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         Genet.
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          6:64-69(1994).
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Query Match Best Local Similarity

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Spermatophyta; Magnoliophyta;
Triticeae; Triticum.
                                                        STRAIN=cv. Chinese Spring;
Ogihara Y., Isono K., Kojima T., E
Ogihara Y., Utsugi S., Murata M.,
Terachi T., Utsugi S., Murata K., M
Gojobori T., Murai R., Murai K., M
Tsunewaki K.;
            "Chinese spring wheat (Trit complete sequence and contiplant Mol. Biol. Rep. 18:24-i-FUNCTION: Translocates
                                                                                                                                                      "Location and nucleotide wheat chloroplast DNA.";
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PRINTS; PR00610; CYTOCHROMEF.
PROSITE: PR00100
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Electron transport; Heme; Chloroplast; Thylakoid; Photosynthesis;
Photosystem I; Photosystem II; Transmembrane; Signal.
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HAWARP; MF 00610; -; 1.
INTESTPTO; IPR000325; APOCYT F.
INTESTPTO; IPR000345; CYTC_heme_
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SUBCELLULAR LOCATION: Chloroplast thylakoid mem anchored (By similarity).
SIMILARITY: Belongs to the cytochrome c family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             receives electrons from the Rieske iron-sulfur protein and passes them to plastocyanin.
SUBUNIT: Interacts with plastocyanin and Rieske iron-sulfur.
                                                                                                                                                                                                                                                 179
                                                                                                                                                                                                                                                                                    241
                                                                                                                                                                                                                                                                                                                     147
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                    IYGSAYVGEN-----
                                                                                                                                                                                                                                                                                                                                                    KATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKSVTENHHL
                                                                                                                                                                                                                                                                                                                                                                                                                          GGFNLN--FVTPSG-----QRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REATGRIVCANCHLASKPVDIEVPQAV-----LPDTVFEAVLRIPYDMQLKQVLANGKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REPAGL-----CPIWGKHIELQQPDRLPYRNNFLED-----VPTEKEYKQ-SGNPLP
                                                                                                                                                                                                            TVIERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQSDQPHSGGVGRNYG
                                                                                                                                                                                                                                                 LKYPIYVGGNRGRGQIYPDG--SKSNNTVYNATSTGIVRKILRKEKGGYEISIVDASDGR
                                                                                                                                                                                                                                                                                                                                                                                         GGLNVGAVLILPEGFELAPPDRISP---ELKEKIGNL-----AFQSYRPDKKN
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                                                                                                                                                                                                                                                                                  -PDAFISKCPNQALRGYRFGVWKK------GRCLDYTELTD--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Score 101.5;
; Pred. No. 1.6;
37; Mismatches
                                                                                                                                                                                                                                                                                                                     ILVIGP--VPGKKY-----SEIVFPILSPDPATKKDAHF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IRON (HEME AXIAL LIGAND) (VIA AMINO NITROGEN) (BY SIMILARITY).
HEME (COVALENT) (BY SIMILARITY).
HEME (COVALENT) (BY SIMILARITY).
IRON (HEME AXIAL LIGAND) (BY SIMILARITY).
FFFA -> NVLE (IN REF. 2).
LVLKK -> WESST (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APOCYTOCHROME F.
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                  PRT;
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                1213
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Query Match
Best Local
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InterPro; IPR007086; RNA_pol_Rpb1_3.
InterPro; IPR007086; RNA_pol_Rpb1_4.
InterPro; IPR007083; RNA_pol_Rpb1_5.
InterPro; IPR007083; RNA_pol_Rpb1_5.
InterPro; IPR007081; RNA_pol_Rpb1_7.
InterPro; IPR007081; RNA_pol_Rpb1_7.
InterPro; IPR007081; RNA_pol_Rpb1_7.
InterPro; IRNA_pol_Rpb1_7.
InterPro; IRNA_pol_Rpb1_7.
InterPro; IRNA_pol_Rpb1_7.
InterPro; IPR04998; RNA_pol_Rpb1_5.
InterPro; IPR04998; RNA_pol_Rpb1_5.
InterPro; IPR04998; RNA_pol_Rpb1_5.
InterPro; IPR04998; RNA_pol_Rpb1_5.
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InterPro; IPR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
15-SEP-2003 (Rel. 42, Last annotation update)
DNA-directed RNA polymerase beta' chain (EC 2.7.7.6) (Transcriptase beta' chain) (RNA polymerase beta' subunit).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Complete
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Smoot J.C., Barbian K.D., Van Gompel J.J., Sylva G.L., Sturdevant D.E., Ricklefs S.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. STRAIN=MGAS8232 /
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Streptococcus pyogenes (serotype M18).
Bacteria; Firmicutes; Lactobacillales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for con
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration - between the Swiss Institute of Bioinformatics and the EMBL outstation -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=MGAS8232 / Serotype M18;
MEDLINE=21927593; PubMed=11917108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=186103;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; AE009961; AAL96913.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           entities requires a license agreement
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Transferase; DNA-directed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RNA)(N).

SUBUNIT: THE ENZYME CONSISTS OF THE ENZYME WHICH IS COMPOSED OF 2 ALPHA BETA' CHAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE RNA POLYMERASE BETA' CHAIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATALYTIC ACTIVITY: N
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OF DNA INTO RNA USING
                              248
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                                                                                                                                                                                                                                                                                                                                                                                                       90;
                                                                                                                                                                                                                                                                                                                                                                                                                          Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          proteome
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GENPDAFISKCFNQALRGYRFGVWKKGRCLDYTELTDTVIERVESKAQCWVKTFENDGVA
                                                                               MAIHV-PLSEEAQAEARLLMLAAE-----HILNPKDGKPVVTPSQDMVLGNYYLTMEDA
                                                                                                                                                                                        WDILEEVIKEHPVLLNRAPTLHRLGIQAFEPVLID--GKALRL-HPLVCEAYNADFDGDO
                                                                                                                                                                                                                                                                                              PTLKMY-QCGVPREMAIEL-
                                                                                                                                 RLCHILYVSMQLMEGKKYCSVKGEPPDLTWYCFKPRKS---VTENHHLIYGSAYV----
                                                                                                                                                                                                                                          -----STDLGRCAEFAFKTVAMDKNNKATKYRYPFV-----YDSKK 195
                                                                                                                                                                                                                                                                                                                                                PTEKEYKOSGNPLPGGFNLNFVTPSGORISPFPM-ELLEKN--SNIKA----
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DNA-DEPENDENT RNA POLYMERASE CATALYZES THE TRANSCRIPTION
TO RNA USING THE FOUR RIBONUCLEOSIDE TRIPHOSPHATES AS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RNA polymerase; Transcription
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                                                                                                                                                                                                                                                                                                                                                                                                  55;
                                                                                                                                                                                                                                                                                                                                                                                                                             Score 100;
Pred. No. 1
                                                                                                                                                                                                                                                                                                 -----FKPFVMREIVAKEYAGNVKAAKRMVERGDERI
                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches 166; Indels 160;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0A9462ACAE37E5DA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        moved. Usage by and for commercial (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           BB
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rheumatic fever
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S.F.,
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RESULT 24

RESULT 24

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                                                                                                               Query Match
Best Local S
Matches 68
                                                                                                                                                                                                                   InterPro; IPR007098; RNA_pol_monon.
InterPro; IPR001016; Viral_RNA_pol_L.
Pfam; PF00946; Paramyx RNA_pol; 1.,
Transferase; RNA-directed RNA polymerase.
SEQUENCE 2331 AA; 266635 MW; 7EDID61D0EEF9B8B
                                                                                                                                                                                                                                                                                                                                                                  EMBL; X68494; CAA48508.1; -. EMBL; Z29337; CAA82542.1; -. PIR; S44054; S44054.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bukreyev A.A., Volchkov V.B., Blinov V.M., Dryga S.A., Netesov "The complete nucleotide sequence of the Popp (1967) strain of virus: a comparison with the Muscke (1980) strain."; Arch. Virol. 140:1589-1600(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  entities requires a license agreement (S or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Marburg virus (strain Popp).
Viruses; ssRNA negative-strand viruses; Mononegavirales;
Marburg-like viruses.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=96028047; PubMed=7487490;
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01-FEB-1994
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATALYTIC ACTIVITY: N nucleoside triphosphate = N diphosphate +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION: THIS PROTEIN IS PROBABLY A COMPONENT OF THE POLYMERASE. IT MAY FUNCTION IN RNA SYNTHESIS, CAPPING, METHYLATION OF CAPS, AND POLY(A) SYNTHESIS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             OF RHABDOVIRUSES AND PARAMYXOVIRUSES.
     176
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                                                                                                                                            Similarity
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IGTDLELFGIADFIIFK--VPVKTIIRNAVSLQASKPGLRVWYRDQNLTPYLCDDEFIVS
                                                 VGVQVLLVLVADCTIFASGLSSSTRSRESQTLSASTSG------NPFQANVEM---
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ilarity 22.8%;
Conservative 3:
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(Rel. 28, Last sequence update)
(Rel. 41, Last annotation update)
RNA polymerase (EC 2.7.7.48) (Large structural protein)
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                                                                                                            Score 99; DB
Pred. No. 35;
11; Mismatches
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                                                                                                            101;
                                                                                                                                                                    Length 2331;
                                                                                                                                                                                                                           CRC64;
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233
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                                                                                                       Matches
                                                                                                                         Query Match
Best Local
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HAMAP; MF_00022; -; 1
InterPro; IPR004526; Gl1X_arch.
InterPro; IPR000924; Glu_ERNA-synt_1c.
Pfam; PF00749; tRNA-synt 1c; 1.
Pfam; PF03590; tRNA-synt_1c C; 1.
PRINTS; PR00987; TRNASYNTHGLU.
                                                                                                                                                                                                                                                                                                                                                                                                                   the European Bioinformatics Institute. There are no restrictions use by non-profit institutions as long as its content is in modified and this statement is not removed. Usage by and for comentities requires a license agreement (See http://www.isb-sib.ch/anor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=Vc1 / DSM 3638 / ATCC 43587 / JCM 8422;
Weiss R.B., Dunn D.M., Robb F.T., Brown J.R.;
"The complete sequence of the Pyrococcus furiosus genome.";
Submitted (FEB-2002) to the EMBL/GenBank/DDBJ databases.
-- CATALYTIC ACTIVITY: ATP + L-glutamate + tRNA(Glu) = AMP
-- diphosphate + L-glutamyl-tRNA(Glu)
-- SUBCELLULAR LOCATION: Cyroplasmic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-SEP-2003 (Rel. 42, Created)
15-SEP-2003 (Rel. 42, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation updat
Glutamyl-tRNA synthetdse (EC 6.1.1.17) (Glu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation -
                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                              Complete proteome.
                                                                                                                                                                                                                                             TIGRFAMs; TIGR00463; gltX_arch; 1.
PROSITE; PS00178; AA_TRNA_LIGASE_I; FALSE_NEG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -!- SIMILARITY: Belongs to class-I aminoacyl-tRNA synthetase family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Archaea; Euryarchaeota;
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                                                                                                                                                                                                                             Aminoacyl-tRNA synthetase; Protein biosynthesis; Ligase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=2261;
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                                                                                                                         Similarity
 QSGNPLPGGFNLNFVTPSGQRISPFPMELLEKNSNIKASTDLGRCAEFAFKTVAMDKNNK 181
                                LGENPE----LRKKAREIVPIVNKIVEEVNTLSLEEQKKKLEEIYPEYFMEGTKKEKEEK
                                                                   LGQDKEVDGTLYREPAGLCPIWGKHIE-----LQQPDRLP--YRNNFLEDVPTEKEYK 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DSKKRLCH-ILYVSMQLMEGKKYC-SVKGEPPDLTWYCFKPRK-SVTENHHLIYGSAY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -GDQIIAM-----YLED-----
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                                                                                                                                                                    572 AA; 66562 MW;
                                                                                                       Conservative
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                                                                                                       32;
                                                                                                                       Pred.
                                                                                                                         Score 98.5;
Pred. No. 5
                                                                                                                                                                                          "HIGH" REGION
                                                                                                                                                                            5057509BC4F69FC6 CRC64;
                                                                                                       Mismatches 113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  572
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8
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                                                                                                                                      DB 1;
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RESULT 26
ACCH P1920
ID ACCH
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01-NOV-1990 (Rel. 16, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
Acylamino-acid-releasing enzyme (EC 3.4.19.1)
         ACT_SITE
ACT_SITE
ACT_SITE
SEQUENCE
                                                               PROSITE; PO
Hydrolase;
MOD_RES
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                                                                                                                                                                                                                                                                                      This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Extra the European Bioinformatics Institute. There are no restruse by non-profit institutions as long as its content modified and this statement is not removed. Usage by ancentities requires a license agreement (See http://www.isb-s
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sue scrota
                                                                                                                                                                                                                                  EMBL; D00524; BAA00411.1; -.
                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Tsunasawa S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=90110044; PubMed=2691504;
Mitta M., Asada K., Uchimura Y.,
                                                                                                                                                         InterPro;
                                                                                                                                                                                              InterPro;
                                                                                                                                                                                                                 MEROPS; S09
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APH) (Acylaminoacyl-peptidase)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  he primary structure of porcine liver acylamino zyme deduced from cDNA sequences.";
Biochem. 106:548-551(1989).
                                                                                                                                                                                                                                                                                                                                                                                                              SUBUNIT: Homotetramer.
SIMILARITY: BELONGS TO PEPTIDASE FAMILY S9C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CATALYTIC ACTIVITY: Acylaminoacyl-peptide + H(2)0 = acylamino
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FUNCTION: THIS ENZYME CATALYZES THE HYDROLYSIS OF THE AMINO-
TERMINAL PEPTIDE BOND OF AN "ACETYLATED PEPTIDE TO GENERATE
AN W-ACETYLATED AA AND A PEPTIDE WITH A FREE AMINO-TERMINUS.
IT PREFERENTIALLY CLEAVES OFF AC ALA, AC-MET AND AC-SER.
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                                                                                                                         PS00708;
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IPR002471; Prol_endopep_ser.
IPR000379; Ser_estrs_site.
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Cetartiodactyla; Suina;
             MW;
         ACETYLATION.
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(See http://www.isb-sib
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ina; Suidae;
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         EM (BY SIMILARITY).
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EM (BY SIMILARITY).
CRC64;
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Query Match
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Matches 96; Conserv
377
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                               SVDCTADEO-----NECGSNTALIAGLAVGGVLLLAL
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VFDSPQRSRQDLFAVDTQMGSVTSLTAGGSGGSWKLLTI
                                                                                                   TPPTPETALQC------TADKFPDSFGACDVQA--CKRQKTSCVGGQIQST
                                                                                                                                      FCTNRRSALYYVDLTG-GKCEL-----LSDESVAVT---SPRLSPDQCRIVYLRFPSL
                                                                                                                                                                                                             PVLCVLDIESGN---ISVLEGVPESVSPGQAFWAPGDTGVVFVGWW----
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                                                                  VPHQ-----QCGQLCLYDWYTRVTSVVVDIVPRQLGE-DFSGIYCSLLPLGCWSADSQRV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 98.5; DI
Pred. No. 8.1;
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P27306;
01-AUG-1992
16-OCT-2001
28-FEB-2003
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REVISIONS.
STRAIN-K12 / MG1655;
MEDLINE=97426617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch
                                                                                       Daniels D.L.;
"Analysis of the Escherichia coli genome.
region from 89.2 to 92.8 minutes.";
Nucleic Acids Res. 21:5408-5417(1993).
                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN=K12 / MG165
                                                                                                                                                                                                                                                                       Boonstra B., French C.E., Wainwright I., B: "The udhA gene of Escherichia coli encodes nucleotide transhydrogenase.";
                                                                                                                                                         MEDLINE=94089392; PubMed=8265357;
Blattner F.R., Burland V.D., Plunkett
                                                                                                                                                                                                                                                                     nucleotide transhydrogenase
                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A., SEQUENCE OF 1-26, MEDLINE=99121046; PubMed=9922271;
                                                                                                                                                                                                                                                                                                                                                                                        вастегіа; Proteobacteria; Gammaproteobacteria;
Enterobacteriaceae; Escherichia.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Escherichia
                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=562;
                                                                                                                                                                                                                                                      . Bacteriol.
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   Burland
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Query Match
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Matches 87
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InterPro; IPR000759; Adrndx_reductase.

InterPro; IPR001327; FAD_pyr_redox.

InterPro; IPR001327; FAD_pyr_redox.

InterPro; IPR000205; NAD_binding.

InterPro; IPR001010; Pyr_redox.

InterPro; IPR004099; pyr_redox_dim.

Pfam; PF000770; pyr_redox_dim; 1.

Pfam; PF02852; pyr_redox_dim; 1.

PRINTS; PR00419; ADXRDTASB.
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NP BIND

CONFLICT

CONFLICT

CONFLICT
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                                                                                                                                                                                                                                                                                                           EMBL; U00006; AAC43068.1; ALT
EMBL; AE000470; AAC76944.1; AL
EMBL; X66026; CAA46822.1; ALT
                                                                                                                                                       PRINTS;
                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=90066338; PubMed=2511419;
Tao K., Makino K., Yonei S., Naka
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Physical map of the oxyR-trmA region Escherichia coli chromosome.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gustafsson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=93077482;
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Mau B., Sh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Riley M., Collado-Vides
                                                                                                                                                                                                                                                                            £coGene;
                                                                                                                                                                                                                                                                                       HSSP; P14218;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 346-465 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "The
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                                                                                                                                                                                                                                                                                                                                                                                                                                           OXIDOREDUCTASES CLASS-I.
CAUTION: REF.4 SEQUENCE DIFFERS
FRAMESHIFT IN POSITION 14.
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                                                                                                                                                                                                                                                                                           AE000470; AAC76944.1; ALT INI:
X66026; CAA46822.1; ALT FRAME
X16531; -; NOT ANNOTATED CDS.
   87; Conser
                                                                                                                      PR00945; HGRDTASE.
PR00411; PNDRDTASEI
PD000139; FAD_pyr_re
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                                                                                                                                                        PR00368; FADPNR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nplete genome sequence of 277:1453-1474(1997).
                                                                                                                                                                                                                                                                            EG11428; sthA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OF 1-345
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465
   Conservative
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Flavoprotein; FAI
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             20.3%;
                       3.4%;
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                                             MW;
   53;
          Score 98;
Pred. No.
Pred. No. 4.8;
3; Mismatches
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                                                                            FAD (FLAVIN PART) (BY SIMILARITY)
                                                                                                         FAD; NADP; NAD; Complete proteome
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L (IN REF. 4).
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           DB 1;
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Ig of oxyR, the positive response to oxidative orotein and a
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RESULT 28
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16-OCT-2001
15-SEP-2003
                                                                          Kakiuchi H., Watanabe M., Ushijima T., Toyota M., Imai K., Weisburger J.H., Sugimura T., Nagao M.;
"Specific 5'-GGA-3'--s'-GGA-3' mutation of the Apc gene i tumors induced by 2-amino-1-methyl-6-phenylimidazo[4,5-b]py Proc. Natl. Acad. Sci. U.S.A. 92:910-914 (1992)

-I-FUNCTION: Tumor suppressor. Promotes rapid degradation and participates in wnt signaling. APC activity is corrite phosphorylation state (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APC_RAT
P70478;
                                                                                                                                                                                                                                              Sugimura T., Nagao M.; "cDNA cloning of the rat APC Mamm. Genome 6:746-748(1995).
                                                                                                                                                                                                                                                                                                                                                     Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata;
Mammalia; Eutheria; Rodentia;
NCBI TaxID=10116;
                                                                                                                                                                                     STRAIN-Sprague-Dawley, and Fische MEDLINE-95148647; PubMed-7846077;
                                                                                                                                                                                                                                                                                      MEDLINE=96116966; PubMed=8563176;
Toyota M., Ushijima T., Kakiuchi H.,
                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN=Fischer 344
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                     axin (By similarity).
PTM: PHOSPHORYLATED BY
SIMILARITY: Contains 7
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(Rel. 40, Last sequence update)
(Rel. 42, Last annotation update)
volyposis coli protein (APC prote
                                                                 Forms homooligomers.
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a collaboration

the Swiss

Institute of Bioinformatics

and the

EMBL outstation

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Query Match
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HSSP; Q02248;
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KKRPSDLMQEAEPSFWDEAEENIEQDGE
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                                                          ADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGAR
                                                                                         PVRDAEPANAQGQPGKPQ-----ASGYAPKSFHVEDTPVCFSRNSS-----LSSLSIDSE
                                                                                                                       - PNFIIPSNPSVTPPTPETALQCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCT
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                                                                                                                                                                                                                                                                             ---SSLDFDDDDVDLSR-EKAELRKGKESKDSEAKVTCHTEP
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                                                                                                                                                     AATDEKLONFAIENTPVCFSRNSSLSSLSDVDQENNNNEETG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 98;
Pred. No.
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ASP/GLU-RICH (ACIDIC).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R: IN AN IQ-INDUCED COLON TUMOR 3CBB2EA8A34E8F47 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 2842;
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                               EGEWQSPRKVG
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Q61554; Q60826;
01-NOV-1997 (Re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=CD-1; TISSUE=Kidney;
Ota K., Kumar A., Wada J., Liu Z., Kanwar Y.S.;
Ota K., Kumar A., Wada J., Liu Z., Kanwar Y.S.;
Submitted (APR-1995) to the EMBL/GenBank/DDBJ databases.

-i- FUNCTION: STRUCTURAL COMPONENT OF CONNECTIVE TISSUE MICROFIBRILS
-i- FUNCTION: STRUCTURAL COMPONENT OF CONTAINING MICROFIBRILS PROVIDE
--- TATAT BINDS CALCIUM, FIRRILLIN-1 CONTAINING MICROFIBRILS UPPORT.

--- LONG-TERM FORCE BEARING STRUCTURAL SUPPORT.
--- PTM: FORMS INTERMOLECULAR DISULFIDE BONDS EITHER WITH OTHER
--- FIRRILLIN-1 MOLECULES OR WITH OTHER COMPONENTS OF THE
MICROFIBRILS (BY SIMILARITY)
--- SIMILARITY: Contains 47 EGF-like domains.
--- SIMILARITY: Contains 7 TGF-beta binding protein (TGFBP) domains.
                                                                                                                                                                        PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                             This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=95130561; PubMed=7829516; Yin W., Germiller J., Sanguineti C., Pereira L., Ramirez F., Bonadio J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1997 (Rel. 28-FEB-2003 (Rel.
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                                                                                                 Repeat;
                                                                                                                                                                                     SMART; SM00179; EGF_CA; 42.
PROSITE; PS00010; ASX_HYDROXYL;
                                                                                                                                                                                                                                                                                                      MGD:
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EMBL; U22493; AAA64217.1; -.
PIR; A55624; A55624.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Primary structure and developmental fibrillin gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=10090;
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                                                                                                                             PROSITE; PS00022; EGF_1; 2.
PROSITE; PS01186; EGF_2; 38.
PROSITE; PS01187; EGF_CA; 43.
Extracellular matrix; Calcium-binding;
                                                                                                                                                                                                                 Pfam; PF00008; EGF; 4
Pfam; PF00683; TB; 9.
                                                                                                                                                                                                                                                                                                                                                                                     or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                   entities requires a license agreement
  DOMAIN
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                                                                                                                                                                                                                                            InterPro; IPR000152; Asx_hydroxyl.
InterPro; IPR001881; EGF_Ca.
InterPro; IPR006209; EGF_like.
InterPro; IPR002212; Fibril-assoc.
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                                                                                                                Signal
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FIBRILLIN 1.

EGF-LIKE 1.

EGF-LIKE 2.

EGF-LIKE 3.

EGF-LIKE 4. (

EGF-LIKE 5. (

TGFBP 1.
                                                                                                     POTENTIAL
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                4, CALCIUM-BINDING 5, CALCIUM-BINDING
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                                                                                                                               Glycoprotein; EGF-like domain;
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PRO-RICH.  EGF-LIKE 6.  EGF-LIKE 7, CALCIUM-BINDING.  EGF-LIKE 8, CALCIUM-BINDING.  EGF-LIKE 9, CALCIUM-BINDING.  EGF-LIKE 10, CALCIUM-BINDING.  TGFBP 2:  TGFBP 2:  TGFBP 11, CALCIUM-BINDING.  EGF-LIKE 11, CALCIUM-BINDING.  EGF-LIKE 12, CALCIUM-BINDING.  EGF-LIKE 13, CALCIUM-BINDING.  EGF-LIKE 14, CALCIUM-BINDING.  EGF-LIKE 15, CALCIUM-BINDING.  EGF-LIKE 16, CALCIUM-BINDING.  EGF-LIKE 17, CALCIUM-BINDING.  EGF-LIKE 18, CALCIUM-BINDING.  EGF-LIKE 19, CALCIUM-BINDING.  EGF-LIKE 19, CALCIUM-BINDING.  EGF-LIKE 19, CALCIUM-BINDING.  EGF-LIKE 19, CALCIUM-BINDING.  EGF-LIKE 19, CALCIUM-BINDING.  EGF-LIKE 19, CALCIUM-BINDING.  EGF-LIKE 10, CALCIUM-BINDING.
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Q63373;
28-FEB-2003
28-FEB-2003
15-SEP-2003
                                                                                                                                                                                                                                                                                                                                                                                  FUNCTION, AND INTERACTION WITH NEUROLIGIN 1.

MEDLLINE=97467410; PubMed=9325340;

Nguyen T., Suedhof T.C.;

"Binding properties of neuroligin 1 and neurexin
as heterophilic cell adhesion molecules.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Neuroxin 1-beta precursor (Neuroxin I-beta).
                         calmodulin-dependent
with neurexins.";
                                                                                                                                                                                                               "Structures, alternative neuroligins.";
                                                                                                                                                                                                                                                                                        INTERACTION WITH NLGN1; NLGN2 AND NLGN3 MEDLINE=96162010; PubMed=8576240;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ushkaryov Y.A., Hata Y., Ichtchenko K., Slaughter C.A., Suedhof T.C.;
                                                                      "CASK: a novel dlg/PSD95 homolog with an.
                                                                                                              MEDLINE=96256685; PubMed=8786425;
                                                                                                                                                                                                                                                               Ichtchenko K.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=94216308; PubMed=8163501;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF N-TERMINUS,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ushkaryov Y.A., Petrenko A.G., Geppert M., "Neurexins: synaptic cell surface proteins latrotoxin receptor and laminin."; Science 257:50-56(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=92320296; PubMed=1621094;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.,
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                                                                                                                                            INTERACTION WITH CASK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conserved domain structure of beta-neurexins. Unusual cleaved signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2385
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                                                                                                                                                                                              Chem.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in receptor-like neuronal
  16:2488-2494(1996)
                                                                                                                                                                                                                                                            Nguyen
                                                                                                                                                                                                                                                                                                                                                                 272:26032-26039(1997).
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                                                                                                                                                                                              271:2676-2682(1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      269:11987-11992(1994).
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Rodentia;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND ALTERNATIVE
                                             protein kinase
                                                                                                                                                                                                                                                               T., Suedhof T.C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AND O-GLYCOSYLATION
                                                                                                                                                                                                                                        splicing,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Craniata; Vertebrata; Euteleostomi; Sciurognathi; Muridae; Murinae; Rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SPLICING
                                                  domain identified by interaction
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cell-surface proteins.";
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related
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MEDLINE-99449307; PubMed-10520997;
Rudenko G., Nguyen T., Chelliah Y., Suedhof T.C., Deisenhofer "The structure of the ligand-binding domain of neurexin Ibeta: regulation of LNS domain function by alternative splicing."; Cell 99:93-101(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sugita S., Saito F., Tang J., Satz J.,
"A stoichiometric complex of neurexins
J. Cell Biol. 154:435-445(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=99211386; PubMed=10197529;
Sugita S., Khvochtev M., Suedhof T.C.;
"Neurexins are functional alpha-latrotoxin
                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=99211386; PubMed=10197529;
              SIGNAL
CHAIN
                                         PROSITE; PS50025; LAM_G_DOMAIN; 1.
Signal; Transmembrane; Cell adhesion;
Alternative splicing; Alternative pro
                                                                                        Pfam; PF00054; laminin_G
SMART; SM00294; 4.1m; 1.
SMART; SM00282; LamG; 1.
                                                                                                                                                                                                                               modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 47-302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=21363578;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INTERACTION WITH ALPHA-DYSTROGLYCAN.
DOMAIN
                                                                                                                                                                                                  EMBL; M96375;
                                                                                                                                     InterPro;
                                                                                                                                                                                                                                                                                                                                                     PTM: Highly O-glycosylated and minor N-glycosylated SIMILARITY: Contains 1 laminin G-like domain. SIMILARITY: BELONGS TO THE NEUREXIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Comment=A number of isoforms, alpha-type and beta-type (shown here), are produced by use of alternative promoters. Beta-type isoforms in their N-terminus; Event=Alternative splicing; Named isoforms-4; Comment=There is a combination of two alternatively spliced domains at sites 4 and 5 which are shared with alpha isoforms (AC 063372) and seem to be used independently. Experimental confirmation may be lacking for some isoforms; Name=1; Synonyms=Beta 4A5A; IsoId=063373-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FUNCTION: Neuronal cell surface protein that may be involved cell recognition and cell adhesion by forming intracellular junctions through binding to neuroligins. May play a role in
                                                                                                                                                                                                                                                                                                                                                                                                                  Name=4; Synonyms=Beta 4B5B;
IsoId=Q63373-4; Sequence=VSP_003496,
                                                                                                                                                                                                                                                                                                                                                                                                                                             Name=2; Synonyms=Beta 4A5B;
IsoId=Q63373-2; Sequence=VSP_003497;
Name=3; Synonyms=Beta 4B5A;
IsoId=Q63373-3; Sequence=VSP_003496;
                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE SPECIFICITY: BRAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          formation or maintenance of synaptic junctions. May mediate
                                                                                                                                                                   1C4R;
                                                                                                                                                                                   B40228; B40228
                                                                                                                                 IPR001791; Laminin G.
IPR003585; Neurexin-like
                                                                                                                                                                   28-SEP-99.
                                                                                                                                                                                                  AAA41705.1;
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                                                                                                                         ຸດ
 NEUREXIN 1-BETA.
EXTRACELLULAR (POTENTIAL)
                                              promoter usage;
                                                            Glycoprotein;
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                                                                                                                                                                                                                                                  http://www.isb-sib.
                                                                                                                                                                                                                                                                                                                                                                                                                     VSP_003497;
                                                                                                                                                                                                                                                             Usage
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   binds to CASK.
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Best Local
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                                                                                                                                                            MEDLINE-95071392; PubMede-7526854;
Rolline S.A., Evane M.J., Johnson K.K., Elliot E.A., Squinto S.P. Matis L.A., Rother R.P.;
"Molecular and functional analysis of porcine E-selectin reveals potential role in xenograft rejection.";
Biochem. Biophys. Res. Commun. 204:763-771(1994).
                                                                                                                                                                                                                                                                                                                 TEM2_PIG STANDARD; PRT; 484 AA.

P98110;
01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
E-selectin precursor (Endothelial leukocyte adhesion molecule 1)
(ELAM-1) (Leukocyte-endothelial cell adhesion molecule 2) (LECAM-1)
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CARBOHYD
VARSPLIC
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                                       Biochem. Biophys. Res. Commun. 201:805-805(1994).

-i- FUNCTION: EXPRESSED ON CYTOXINE INDUCED EMPOTHELIAL CELLS
-i- FUNCTION: EXPRESSED ON CYTOXINE INDUCED EMPOTHELIAL CELLS

BEDAM-1 IS SIALYL-LEWIS X (ALPHA(1->3)FUCOSYLATED DERIVATIV

POLYLACTOSAMINE THAT ARE FOUND AT THE NONREDUCING TERMINI
                                                                                        SEQUENCE FROM N.A.
TISSUE=Aortic endothelium;
TISSUE=Aortic endothelium;
MEDLINE=94271236; PubMed=7516159;
TBang Y.T.M., Haskard D.O., Robinson M.K.;
"Cloning and expression kinetics of porcine vascular molecule.";
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                                                                                                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=Aortic endo
                                                                                                                                                                                                                                                       NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                  Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                                                                                                                                                                                       Sus scrofa (Pig)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VARSPLIC
                                                                                                                                                                                                                                                                                                            (CD62E).
FUNCTION: PLAYS AN IMPORTANT ROLE IN ACUTE CELLULAR REJECTION AND PROBABLY ALSO IN XENOGRAFT REJECTION. SUBCELLULAR LOCATION: Type I membrane protein.
                               GLYCOLIPIDS).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       484
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---GGLANPTRVGGREPYPGSAEVIRESSSTTGMVVGIVAAAALCILILLLYAMY--KYRN
                                                                                                                                                                                                                                                                                                                                                                                                                                                     RNKGVQAAHHEHEFQSDRGARKKRPSDLMQEAEPSFWDEAEENIE-QDGETHV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A--AGSLSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGAC-----DVQACKRQKT
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Cetartiodactyla; Suina; Suidae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   38;
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CYTOPLASMIC (PO:
LAMININ G-LIKE.
POLY-THR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 97;
Pred. No.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                     NDUCED ENDOTHELIAL CELLS AND TES. THE LIGAND RECOGNIZED BY ->3) FUCOSYLATED DERIVATIVES (THE NONREDUCING TERMINI OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 468
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Sus.
                                                                                                    cell adhesion
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                     ALLOGRAFT
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                    Query Match
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Péam; PF00008; EGF; 1,

Péam; PF000089; lectin c; 1.

Pfam; PF00084; sushi; 4.

SMART; SM00032; CCP; 4.

SMART; SM00034; CLECT; 1.

PROSITE; PS001086; EGF 1; 1.

PROSITE; PS01186; EGF 2; 1.

PROSITE; PS01615; C TYPE LECTIN 1; 1.

PROSITE; PS00615; C TYPE LECTIN 2; 1.

Cell adhesion; Transmembrane; GTycoprotein; EG
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SEQUENCE
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InterPro; IPR001304; Lectin C.
InterPro; IPR000436; Sushi SCR_CCP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; L39076; AAA61545.1; -. EMBL; U08350; AAA21541.1; -. HSSP; P16581; 1ESL.
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-!- SIMILARITY: Contains 1 C-type lectin family domai
-!- SIMILARITY: Contains 1 EGF-like domain.
-!- SIMILARITY: Contains 4 Sushi (SCR) domains.
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A Aizawa K., Izawa M., Nishi K., Kiyosawa H., Kondo S., Yamanaka I.,
A Salto T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Salto R.,
A Salto T., Okazaki Y., Gojobori T., Bono H., Kasukawa T., Salto R.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kadota K., Matsuda H.A., Ashburner M., Batalov S., Casavant T.,
A Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
A Kuchl P., Lewis S., Matsuo Y., Nikaido I., Pesole G., Quackenbush J.,
A Schriml L.M., Staubli F., Suzuki R., Tomita M., Wagner L., Washio T.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
A Sakai K., Okido T., Furuno M., Aono H., Baldarelli R., Barsh G.,
A Sakai K., Okido T., Bojunga N., Carninci P., de Bonaldo M.F.,
A Blake J., Boffelli D., Bojunga N., Carninci P., de Bonaldo M.F.,
A Buttincich S., Hill D., Hofmann M., Hume D.A., Kamiya M., Lee N.H.,
Lyons P., Marchionni L., Mashima J., Mazzarelli J., Mombaerts P.,
A Nordone P., Ring B., Ringwald M., Rodriguez I., Sakamoto N.,
Sasaki H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
A Sasaki H., Toyo-oka K., Wang K.H., Weltz C., Willtaker C., Wilming L.,
A Warshewski H., Toyo-oka K., Wang K.H., Waltz C., Williang L.,
A Warshey H., Sato K., Schoenbach C., Seya T., Shibata Y., Storch K.-F.,
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Q9CS84; O88722;
28-FEB-2003 (Re
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=CD-1; TISSUE=Brain; Graveley B.R., Philipps D.L. "Sequencing of the neurexin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
Neurexin 1-alpha (Neurexin I-alpha) (Fragments).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 141-529 FROM N.A. STRAIN-C57BL/6J; TISSUE-Embryo;
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Mammalia; E
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   SEQUENCE
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                                                              409:685-690(2001).
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   478-520 FROM N.A
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Rodentia;
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Sciurognathi; Muridae; Murinae;
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thi; Muridae; Murinae; Mus
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Matches
                                                                                                                                                 Query Match
                                                                                                                                                                                                                                       DOMAIN
CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AF387674; AAK70469.1; --
EMBL; AF387674; AAK70470.1; --
EMBL; AF387674; AAK70471.1; --
EMBL; AK017578; BAB30815.1; --
EMBL; AK017578; CAA07257.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through between the Swiss Institute of Bioinformatics and the Entropean Bioinformatics Institute. There are no restitute by non-profit institutions as long as its content
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gorecki D.C., Szklarczyk A., Lukas
"Differential seizure-induced and
                                                                                                                                                                                                                                                               DOMAIN
DOMAIN
                                                                                                                                                                                                                                                                                                                NON_TER
                                                                                                                                                                                                                                                                                                                                                                          SMART; SM00294; 4.1m;
SMART; SM00282; LamG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or send an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     entities
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAIN=C57BL/10; TISSUE=Brain;
                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                   VARSPLIC
                                                                                                                                                                                                                       VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                modified and this statement is not removed.
                                                                                                                                                                                                                                                                                        TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                          MGD; MGI:1096391; Nrxn1
                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                     Alternative
                                                                                                                                                                                                                                                                                                                                                    [ransmembrane;
                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00054; laminin
                                                                                                                                                                                                                                                                                                                                                                                                                nterPro;
                                                                                                                                     Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name=2; Synonyms=Alpha-2B;
IsoId=Q9CS84-2; Sequence=VSP_003484;
Name=3; Synonyms=Alpha-2C;
IsoId=Q9CS84-3; Sequence=VSP_003485;
IsoId=Q9CS84-3; Sequence=VSP_003485;
SIMILARITY: Contains at least 2 laminin G-like domains.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                signaling.
SUBUNIT: The cytoplasmic C-terminal region binds to CASK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: Type I membrane ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: Neuronal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Event=Alternative splicing; Named isoforms=3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q63373;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 IsoId=Q9CS84-1; Sequence=Displayed;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Comment=Additional isoforms
                                                                                                                           52;
                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        requires a license agreement (See an email to license@isb-sib.ch).
                                                 A--AGSLSEETPNFIIPSNPSVTPPTPETALQCTADKFPDSFGAC----DVQACKRQKT
                                                                                                  QSDQPHSGGVGRNYGFYY-----VDTTGE-----GKCALSDQVPDCLVSDSAAVSYT 376
                                                                                                                                                                                                                                                                                                                                                                PS50025; LAM_G_DOMAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            recognition and
 SCVGGQIQSTSV-----DCTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLD
                         SEMSTSIMETTTTLATSTARRGKPPTKEPISQTTDDILVAS-AECPSDDEDIDPCEPSS-
                                                                          EQGQPFQGQLS---GLYYNGLKVLNMAAENDANIAIVGNVRLVGEVPSSMTTESTATAMQ
                                                                                                                                                                                                                                                                                                                                                                                                                IPR001791; Laminin_G.
IPR003585; Neurexin-like
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (JUN-1998) to the EMBL/GenBank/DDBJ databases.
ON: Neuronal cell surface protein that may be involved ecognition and cell adhesion. May mediate intracellular
                                                                                                                                                                             529
                                                                                                                                                                                                                                                                                                                                      splicing.
                                                                                                                           Conservative
                                                                                                                                                                                                     82
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1C4R.
                                                                                                                                                                           AA;
                                                                                                                                                                                                                                                                                                                                                    Cell adhesion;
                                                                                                                                                                                                                                        141
453
474
529
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333
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                                                                                                                                                                                                     96
                                                                                                                                      3.38;
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                                                                                                                           38;
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                                                                                                                                        Pred.
                                                                                                                                                    Score 97;
                                                                                                                                                                          /FTId=VSP 003484.
Missing (In isoform 3).
/FTId=VSP 003485.
; 282E04A03DEBA671 CRC6.
                                                                                                                                                                                                                            N-LINKED (GLCNAC. . .)
Missing (in isoform 2)
                                                                                                                                                                                                                                                                            POTENTIAL.

CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                  LAMININ G-LIKE
                                                                                                                                                                                                                                                                                                     EXTRACELLULAR (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                    Repeat;
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                                                                                                                           Mismatches
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                                                                                                                                                    DB 1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Kaczmarek L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     http://www.isb-sib.ch/announce,
                                                                                                                           103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Usage
                                                                                                                                                    Length 529;
                                                                                                                                                                             CRC64;
                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δĄ
                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        restrictions
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Simons J.P.; of neurexin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a collaboration -
MBL outstation -
                                                                                                                           40;
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                                                                                                                           Gaps
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RESULT 33
AD22-HUMANA
AD22-HUMANA
AD22-HUMANA
AD22-HUMANA
AD22-HUMANA
AD26-HIMANA
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16-OCT-2001 (Rel. 40, Created)
16-OCT-2001 (Rel. 40, Last sequence update)
28-FEB-2003 (Rel. 41, Last annotation update)
ADAM 22 precursor (A disintegrin and metalloproteinase domain 22)
(Metalloproteinase-like, disintegrin-like, and cysteine-rich prot
(Metalloproteinase-like, disintegrin-DAMA22-3).
                                                                                                                                                                                                                                                                                                                                                                                         Poindexter K., Nelson N., DuBose R.F., Black R.A., Cerretti "The identification of seven metalloproteinase-disintegrin (genes from genomic libraries."; Gene 237:61-70(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=99453762;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sagane K., Ohya Y., Hasegawa Y. "Metalloproteinase-like, disint and MDC3: novel human cellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM
TISSUE=Brain;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "The specific expression of three novel splice variant forms of human metalloprotease-like disintegrin-like cysteine-rich protein 2 gene in brain tissues and glicmas.";
Jpn. J. Cancer Res. 91:1001-1006(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=20504287; P
Harada T., Nishie A
Kuwano M., Wada M.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens (Human).
Eukaryota, Metazoa, Chordata,
Mammalia, Eutheria, Primates,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 40-906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wada M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   brain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=98359734;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Isolation and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADAM22 OR MDC2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AD22_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SSUE=Brain;
  IsoId=Q9POK1-5; Sequence=VSP_005482; TISSUE SPECIFICITY: HIGLY EXPRESSED IN OR NOT AT ALL IN OTHER TISSUES.
                                                                                                                                                   Name=1; Synonyms=Epsilon;
IsoId=Q9POKI-1; Sequence=Displayed;
Name=2; Synonyms=Delta;
IsoId=Q9POKI-2; Sequence=VSP_005482,
Name=3; Synonyms=Alpha;
                                                                                                                                                                                                                                                                                               SUBCELLULAR LOCATION: Type ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                    FUNCTION: PROBABLE LIGAND FOR INTEGRIN CATALYTIC METALLOPROTEASE-LIKE PROTEIN. SUBCELLULAR LOCATION: Type I membrane I
                                                                       Name=5
                                                                                                                                                                                                                                                                       Event=Alternative splicing; Named
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 484
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                                                                                   IsoId=Q9P0K1-4; Sequence=VSP_005482,
                                                                                                          rsoId=Q9P0K1-3; Sequence=VSP_005483;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Torigoe K., Harada T.,
on and tissue specific
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (JAN-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           334:93-98(1998)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=11050470;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PubMed=10524237;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PubMed=9693107;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A., Torigoe
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ISOFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (ISOFORMS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hasegawa Y., Tanaka I.;
like, disintegrin-like, c
an cellular disintegrins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5).
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Catarrhini; Hominidae;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kuwano
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ikezaki
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                                                                                                                                                                                                                                                                          isoforms=5;
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ke, cysteine-rich proteins MDC2
|rins highly expressed in the
                          H
                                                                                                                                                                                                                                                                                                                       protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              K., Shono
                                                                                                                                                                                                                                                                                                                                                                  H
                       THE BRAIN. DETECTED SLIGHLY
                                                                                     VSP_005483
                                                                                                                                                                               VSP_005484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      novel ADAM family
                                                                                                                                                                                                                                                                                                                                                                    SHI
                                                                                                                                                                                                                                                                                                                                                                    BRAIN.
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; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              T., Maehara
                                                                                                                                                                                                                                                                                                                                                                    THIS IS
                                                                                                                                                                                                                                                                                                                                                                                                                                       i D.P.;
(ADAM)
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PROSITE; PS00427; DISINTEGRIN 1;
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PROSITE; PS00122; EGF 1; 1.
PROSITE; PS01186; EGF 2; FALSE NI
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Pfam; PF01562; Pep_M12B_propep; 1.
Pfam; PF01421; Reprolysin; 1.
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GO; GO:0005178; F:integrin binding activity; NAS.
GO; GO:0007162; P:negative regulation of cell adhesion; NAS.
InterPro; IPR006586; ADAM cysteine.
InterPro; IPR001762; Disintegrin.
InterPro; IPR001762; Disintegrin.
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InterPro; IPR001870; Reprolysin.
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EMBL; AF155381; AAF73288.1;
EMBL; AB009671; BAA32349.1;
EMBL; AB009671; BAA32350.1;
EMBL; AF073291; AAF22476.2;
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SIMILARITY: Contains 1 EGF-like domain.
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SEQUENCE
            Science [2]
                                  Ushkaryov Y.A., Petrenko A.G., Geppert M., "Neurexins: synaptic cell surface proteins latrotoxin receptor and laminin.";
PARTIAL SEQUENCE
                                                                       MEDLINE=92320296; PubMed=1621094;
                                                                                               SEQUENCE FROM N.A.,
                                                                                                                                  Mammalia; Eutheria;
                                                                                                                                             Eukaryota; Metazoa;
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"CASK: a novel dlg/PSD95 homolog with an N-
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"Neurexophilin binding to alpha-neurexins. A single I functions as an independently folding ligand-binding J. Biol. Chem. 273:34716-34723(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ullrich B., Ushkaryov Y.A., Suedhof T.C.; "Cartography of neurexins: more than 1000 isoforms generated alternative splicing and expressed in distinct subsets of new Neuron 14:497-507(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=21363578; PubMed=11470830; Sugita S., Saito F., Teng J., Satz J., "A stoichiometric complex of neurexins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=99211386; PubMed=10197529;
Sugita S., Khvochtev M., Suedhof T.C.;
"Neurexins are functional alpha-latrotoxin receptors.";
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                                                                             This SWISS-PROT entry is copyright. It is produced through a collab
between the Swiss Institute of Bioinformatics and the EMBL outst
the European Bioinformatics Institute. There are no restrictions
                                                                                                                                                                                                              -!- TISSUE SPECIFICITY: Brain (neuronal synaps
-!- PTM: N- and O-glycosylated (By similarity)
-!- MISCELLANEOUS: Alpha-latroxin competes wit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neuron 22:489-496(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=96256685;
               entities requires a license agreement (See http://www.isb-sibor send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NTERACTION WITH ALPHA-DYSTROGLYCAN MEDLINE=21363578; PubMed=11470830;
                                                modified and this statement is not removed.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INTERACTION WITH CASK.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INTERACTION WITH ALPHA-LATROTOXIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Neurosci.
                                                                                                                                                binding.
SIMILARITY: Contains 6 laminin G-like domains.
SIMILARITY: Contains 3 EGF-like domains.
SIMILARITY: BELONGS TO THE NEUREXIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 alpha-latroxin.
SUBCELLULAR LOCATION: Type I membrane protein
ALTERNATIVE PRODUCTS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                signaling
SUBUNIT: The cytoplasmic C-terminal region binds t
G-like domain 2 binds to neurexophilin 1 and 3. It
and alpha 4C bind to alpha-dystroglycan. Isoforms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Event=Alternative promoter;
Comment=A number of isoforms, alpha-type (shown here) and
beta-type, are produced by use of alternative promoters.
Beta-type isoforms differ from alpha-type isoforms in the
                                                                                                                                                                                                                                                                                  Name=Alpha 1A2A3A4A5A;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Event-Alternative splicing; Named isoforms=1;
                                                                                                                                                                                                                                                                                                              Comment=At least 96 isoforms may be produced by alternative splicing. There is a combination of five alternatively spliced domains at sites 1 to 5, each consisting of modular sequences (A-G) that seem to be used independently. For splice site 1 additional splice modules might be possible thus increasing the number of possible isoforms. Beta-type isoforms (AC Q63373) share the combination of two alternatively spliced domains at
                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-terminus;
                                                                                                                                                                                                                                                                                                  sites 4 and 5
                                                                 non-profit' institutions as long
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    16:2488-2494(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PubMed=8786425;
                                                                                                                                                                                                                                                                     Sequence=Displayed;
                                                                                                                                                                                                                   competes with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    an N-terminal
omain identified
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Campbell K., Suedhof T.C.; and dystroglycan in brain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HIIM
                                                                                                                                                                                                                                                    synapse).
                                                                    as its content
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                                                 Usage
                                                                                                                                                                                                                      alpha-dystroglycan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LNS
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Isoforms alpha 2C
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       alpha
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CARBOHYD
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DOMAIN
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SMART; SM00281; LABG; 5.

PROSITE; PS00010; ASX HYDROXYL; 1.

PROSITE; PS00022; EGF_1; FALSE_NEG.

PROSITE; PS01186; EGF_2; FALSE_NEG.

PROSITE; PS50025; LAMG DOMAIN; 6.

Signal; Transmembrane; Repeat; Cell adhesion; Glycoprotein; Alternative splicing; Alternative promoter usage.
                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                         SEQUENCE
                                                                                                                                                                          VARSPLIC
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PIR; A40228; A40228.
HSSP; Q63373; 1C4R.
                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        interPro; IPR001791;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nterPro;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pro; renucción de pro00008; EGF; 3. pro00054; laminin G; pro0054; 4.1m; 1.
                                                                                                                            Similarity
                                    SEMSTSIMETTITLATSTARRGKPPTKEPISQTTDDILVAS-AECPSDDEDIDPCEPSS-
                                                                           EQGQPFQGQLS---GLYYNGLKVLNMAAENDANIAIVGNVRLVGEVPSSMTTESTATAMQ
                                                                                               QSDQPHSGGVGRNYGFYY----VDTTGE-----
                                                        A--AGSLSEETPNFIIPSNPSVTPPTPETALOCTADKFPDSFGAC----
                 SCVGGQIQSTSV-----DCTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLD
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IPR006209; EGF_like.
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၂၀;
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                                                                                                                Score 97; DB
Pred. No. 28;
8; Mismatches
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                                                                                                                                                      Missing (In some isoforms A.)
(FTId=VSP 003492.
Missing (In some isoforms A.)
(FTId=VSP 003493.
VW; D99492302968DE14 CRC64;
                                                                                                                                                                                                                         /FTId=VSP 003490.
DCIRINCNSS -> G (
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LAMININ G-LIKE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EXTRACELLULAR
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Missing (In some isoforms Alpha 1G)
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28-FEB-2003
28-FEB-2003
                                                                                                                                                                                                                                                          HAMAP; MF_00610; -; 1.
InterPro; IPR003225; Apocyt F.
InterPro; IPR003235; CytC_heme_bind.
InterPro; IPR00345; CytC_heme_bind.
Pfam; PF01333; Apocytochr F C; 1.
PROSITE; PS00190; CYTOCHROME C; 1.
                                                                                                                                                                                                                                                                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-Ab5p(kan);
STRAIN-Ab5p(kan);
MEDLINE-22189020; PubMed-12200487;
MEDLINE-2-189020; PubMed-12200487;
                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                    or send
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "The plastid chromosome of Atropa belladonna and its that of Nicotiana tabacum: the role of RWA editing in divergence in the process of plant speciation."; Mol. Biol. Evol. 19:1602-1612(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bukaryota; Viridiplantae; Streptophyta; Embryophyt
Spermatophyta; Magnoliophyta; eudicotyledons; core
Asteridae; lamiids; Solanales; Solanaceae; Atropa.
                                                                                                                                                                                                                       SIGNAL
                                                                                                                                                                                                                                                                                                                                     EMBL; AJ316582; CAC88057.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
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                                                                                                                                                                              METAL
                                                                                                                                                                                                                                      Photosystem
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Maier R.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=33113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Atropa belladonna (Belladonna) (Deadly nightshade)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Apocytochrome
                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                    lectron transport; Heme; Chloroplast; Thylakoid; Photosynthesis; hotosystem II; Transmembrane; Signal.

1 35 BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SIMILARITY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               them to plastocyanin.
SUBUNIT: Interacts with plastocyanin and Rieske iron-sulfur protein (By similarity).
SUBCELLULAR LOCATION: Chloroplast thylakoid membrane. Membra
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FUNCTION: Translocates protons across the thylakoid membrane and transfers electrons from photosystem II to photosystem I. It receives electrons from the Rieske iron-sulfur protein and passes \frac{1}{2}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATRBE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    anchored (By similarity).
SIMILARITY: Belongs to the cytochrome c family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               484
83 REPAGL----CPIWGKHIELQQPDRLPYRNNFLED--
                                           67; Conser
                                                                                                                                                                                                                                                                                                                                                                    an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RDEG---SYHVDESRNYISNSAQSNGAVVKEKQPSSAKSANKNKKNKDKEYYV
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320
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(Rel. 41, Last sequence up
(Rel. 41, Last annotation
                                             Conservative
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305
36
                                                         3.3%;
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                                                                                                       35222 MW;
                                             40;
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Pred.
                                                                                                    NITROGEN) (BY SIMILARITY).
HEME (COVALENT) (BY SIMILARITY).
HEME (COVALENT) (BY SIMILARITY).
IRON (HEME AXIAL LIGAND) (BY SIMILARITY).
; BD6F55BD43ZAJAB4 CRC64;
                                                                                                                                                                           POTENTIAL.
IRON (HEME AXIAL LIGAND)
                                                                                                                                                                                                           APOCYTOCHROME F.
                                             Mismatches
                                                           95.5;
No. 4
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                                             90;
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                ---- VPTEKEYKQ-SGNPLP 128
                                                                        Length
                                             Indels 119;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Tracheophyta;
                                                                                                                                                                           (VIA
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                                                                                                                    SIMILARITY).
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                                          Gaps
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P07888;
01-AUG-1988
01-OCT-1989
                                                                                                                                                                                                                                                                                                                                                                                                      Hiratsuka J., Shimada H., Whittier R., Ishibashi T., Sakamoto M., Mori M., Kondo C., Honji Y., Sun C.-R., Meng B.-Y., Li Y.-Q., Kanno A., Nishizawa Y., Hirai A., Shinozaki K., Sugiura M.; Kiniozaki K., Sugiura M.; White complete sequence of the rice (Oryza sativa) chloroplast genome: intermolecular recombination between distinct tRNA genes accounts for a major plastid DNA inversion during the evolution of the cereals."; Mol. Gen. Genet. 217:185-194(1989).

Mol. Genet. 217:185-194(1989).

-i- FUNCTION: Translocates protons across the thylakoid membrane and transfers electrons from photosystem II to photosystem I. It receives electrons from the Rieske iron-sulfur protein and passes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Wu N.-H., Cote J.C., Wu R.;
"Nucleotide sequence of the rice cytochrome
of sequence variation near this gene.";
Gene 50:271-278(1986).
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STRAIN=cv. Labelle;
MEDLINE=87219885; P
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Spermatophyta; Magnoliophyta; Liliopsida; Poales; Poaceae;
Ehrhartoideae; Oryzeae; Oryza.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Chloroplast
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01-OCT-1989 (Rel. 12, Last seq
28-FEB-2003 (Rel. 41, Last ann
Appocytochrome f precursor.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=cv. Nipponbare;
MEDLINE=89364698; PubMed=2770692;
                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                     protein (By similarity).
SUBCELLULAR LOCATION: Chloroplast thylakoid membrane. Membrane-anchored (By similarity).
SIMILARITY: Belongs to the cytochrome c family.
                                                                                                                                                                                                                                                                                                                                               subunit: Interacts wi
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non-profit institutions as long as its content is in no way and this statement is not removed. Usage by and for commercial requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                  Interacts with plastocyanin and
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R HAMAP; MF 00610; -; 1.

JR HAMAP; MF 00610; -; 1.

JR HAMAP; MF 00610; -; 1.

LITERPTC; IPR002325; Apocyt F.

DR InterPrc; IPR002325; Apocyt F.

DR InterPrc; IPR002345; CytC heme bind.

DR Pfam; PF0133; Apocytcochr F C; 1.

PROSITE; P800190; CYTOCHROMEF C;

DR PROSITE; P800190; CYTOCHROMEF C; 1.

PROSITE; P800190; CYTOCHROMEF C; 1.

TRANSMEM I; Photosystem II; Transmembrane; Signal.

KW Photosystem II; Transmembrane; Signal.

KW Photosystem II; Transmembrane; Signal.

FT SIGNAL 1 35 APOCYTOCHROME F.

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Q61490; O70136;
01-NOV-1997 (Rel
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EMBL; X15901; CAA33961.1;
PIR; JQ0239; CFRZ.
HSSP; P36438; IHCZ.
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                                                                                                   01-NOV-1997 (Rel. 35, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
15-SEP-2003 (Rel. 42, Last annotation update)
CD166 antigen precursor (Activated leukocyte-
(ALCAM) (DM-GRASP protein).
                                                 Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                            Mus musculus
                                                                                          ALCAM
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68; Conserv
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SEQUENCE FROM STRAIN=NFS;

N.A.

NCBI\_TaxID=10090;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Characterization of mouse Aucra, "---
"Characterization of mouse Aucra, "---
Conserved in different homologs and mediates
Conserved in different homologs and mediates
Conserved in different homologs and mediates
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Bowen M.A., Bajorath J., D'Egidio M., Whitney G.S., Palmer
Kobarg J., Starling G.C., Siadak A.W., Aruffo A.;
"Characterization of mouse ALCAM (CD166): the CD6 binding
 SEQUENCE
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SMART; SM00409; IG; 3.

PROSITE; PS50835; IG_LIKE; 4.

PROSITE; PS00290; IG_MHC; FALSE_NEG.
                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR007110; Ig-like.
InterPro; IPR003599; Ig.
InterPro; IPR003006; Ig_MHC.
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EMBL; L25274;
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FUNCTION: CELL ADHESION MOLECULE THAT BINDS TO NEURITE EXTENSION BY NEURONS VIA HETEROPHILIC A INTERACTIONS. MAY PLAY A ROLE IN THE BINDING OF ACTIVATED LEUNCCYTES, AS WELL AS IN INTERACTION
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GO:0007165; P:signal transc
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SUBCELLULAR LOCATION: Type I membrane protein.
SIMILARITY: Contains 3 immunoglobulin-like C2-type
SIMILARITY: Contains 2 immunoglobulin-like V-type of
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European Bioinformatics Institute.
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84; PubMed=8089660;
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IG-LIKE V-TYPE 1.
IG-LIKE V-TYPE 2.
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01-OCT-1989
28-FEB-2003
                                                                                         "Mapping a
                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Mammalia; Eutheria; Primates; NCBI TaxID=9606;
           This
                                Genomics 4:367-375(1989).
-!- SUBUNIT: EFFICIENT DNA BIND
-!- BHLH PROTEIN. BINDS DNA AS
-!- SIMILARITY: BELONGS TO THE
TRANSCRIPTION FACTORS. BHLH
                                                                                                             SEQUENCE FROM N.A.
MEDLINE=89233129; PubMed=2541066;
MORTON C.C., Nussenzweig M.C., So
Pettengill O.S., Shows T.B.;
                                                                                                                                                                                                                              L-myc-2
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           SWISS-PROT entry
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                                                                  DNA BINDING
           copyright.
                                  BHLH-ZIP SUBFAMILY.
                                          BINDING REQUIRES DIMERIZATION A AS AN HETERODIMER WITH MAX.
THE BASIC HELIX-LOOP-HELIX (BI
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European Bioinformatics Institute.

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"Multiple intestinal neoplasia caused by

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murine

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RESULT 39
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Best Local
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InterPro; IPR002418; TF Myc.
Pfam; pr00010; HLH; 1.
Pfam; pr01056; Myc. N_term; 1.
SWART; SM00353; HLH; 1.
PROSITE; PS00038; HLH; 1.
PROSITE; PS00038; HLH; 1.
PROSITE; PS00088; HLH; 1.
Nuclear procein; DNA-binding.
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Q61315; Q62044;
16-OCT-2001 (Rel
16-OCT-2001 (Rel
15-SEP-2003 (Rel
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TRANSFAC; T03539; -
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   use by non-profit institutions as long modified and this statement is not removed entities requires a license agreement (See
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STĀAIN-C57BL/6J, and CAST/EI; TIS
MEDLINE-92263101; PubMed-1350108;
Su L.-K., Kinzler K.W., Vogeletei
Luongo C., Gould K.A., Dove W.F.;
                                                                      Eukaryota; Metazoa;
Mammalia; Eutheria;
                                                                                                                  Adenomatous
                                          SEQUENCE FROM N.A.
                                                            CBI_TaxID=10090;
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                                                                                              musculus (Mouse)
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                                                                                                                                                                                                                                                                                                         GNLAPIFPCLLGEPKIQACSRSESP---SDSEGEEIDVTVKKRQSLSTRKPVI--IAVRA
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357 AA;
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polyposis coli protein (APC pro
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Rodentia;
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  Vogelstein
Dove W.F.;
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1; 4654F534716E0EC3 CRC64;
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Pred. No.
                               TISSUE=Brain;
                                                                         Craniata; Vertebrata; Sciurognathi; Muridae;
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Dicker F., Lambertz
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Luongo C., Gould K.A., 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             region segments.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "The murine APC gene: alternative region segments.";
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                                                                                                                                                                                                                                                                                                           LINE-94061824; PubMed-8242607;

nima M., Sugiyama H., Kitagawa K., Taketo M.;

C gene messenger RNA: novel isoforms that lack exon 7.";

CC gene messenger RNA: novel isoforms that lack exon 7.";

CC gene messenger RNA: novel isoforms that lack exon 7.";

FUNCTION: Tumor suppressor. Promotes rapid degradation of CTNNB1 and participates in Wnt signaling. APC activity is correlated with its phosphorylation state (By similarity).

SUBUNIT: Forms homooligomers. Associates with catenins. Binds axin (By similarity).

ALTERNATIVE PRODUCTS:
IBOId=061315-4; Sequence=VSP_004116, VSP_00
TISSUE SPECIFICITY: EXPRESSED IN LIVER, SPEEL
LUNG, BRAIN, STOMACH; INVESTINE, TESTIS AND O
PTM: PHOSPHORYLATED BY GSK-3B (BY SIMILARITY)
SIMILARITY: Contains 7 ARM repeats.
                                                                                                                           Name=4;
                                                                                                                                                                                                                                                                                         Event=Alternative splicing; Named isoforms=4;
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                                                                                                                                                    IsoId=Q61315-3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ., Kinzler K.W., Vogelstein C., Gould K.A., Dove W.F.; 256:1114-1114(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            of the APC gene.";
256:668-670(1992).
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MGD; MGI:88039; Apc.

GO; GO:0005737; C:cytoplasm; IDA.

GO; GO:0005634; C:nucleus; IDA.

GO; GO:0008013; F:beta-catenin binding activity; IDA.

GO; GO:0018055; P:Wnt receptor signaling pathway; IDA.

InterPro; IPR000225; Armadillo. PROSITE; PS50176; ARM REPEAT; 1. Wnt signaling pathway; Anti-onco Alternative splicing; Repeat; Co EMBL; M88127; AAB59632.1; EMBL; U02937; AAA03443.1; PIR; I49505; I49505. HSSP; Q02248; 3BCT. PF00514; Armadillo\_seg; 4. SM00185; ARM; 5. 451 503 546 590 637 682 61 728 728 728 5493 545 545 589 636 636 y; Anti-oncogene; Phosphorylation;
; Repeat; Coiled coil.
61 COILED COIL (POTENTIAL).
28 LEU-RICH.
29 ARM 1.
45 ARM 2.
46 ARM 3.
36 ARM 4.
316 ARM 5.
31 ARM 6.

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                                                                               ---PKKKRPSRLKSESE
                                                                                                                             SVDCTADEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQS
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                                                                                                               SIDSEDDLLQECISSAM-
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                                                                                                                                                                                            PHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLS------
                                                                                                                                                                                                                            DTV-----IERVESKAQCWVK----TFENDGVASDQPHTYPLTSQASWNDWWPLHQSDQ 333
                                                                                                                                                                                                                                             --YCFSRNDSL-----SSLDFDDDDVDLSREKAEL-----RKGKESKDSEAK 189:
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SER-RICH.
ASP/GLU-RICH (ACIDIC).
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-i- SUBUNIT: Interacts with plastocyanin and Rieske iron-sulfur protein (By similarity).
-i- SUBCELLULAR LOCATION: Chloroplast thylakoid membrane. Membra-
                                                                                                                                                                                                                                                                                                                                                                                                   SIGNAL
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InterPro; IPR002325; Apocyt F.
InterPro; IPR002345; CytC heme bind.
Pfam; PF01333; Apocytochr F C; 1.
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EMBL; AJ400848; CAB88742.1;
EIR; S00430; S00430.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nucleotide sequence and gene organization."; Plant Mol. Biol. 45:307-315(2001).
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MEDLINE=21187424; PubMed=11292076;
Schmitz-Linneweber C., Maier R.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRINTS; PR00610; CYTOCHROMEF
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Novel human diagno Sequence of rat C- Human polypeptide protein encoded by Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus pneu Streptococcus Porovirus - enco Recombinant human Iver peptide HIV-2 provirus - enco Peptide #1907 enco Peptide #1907 enco Peptide #1927 enco Mature rat GM-CSF protein #1832 enco Human bone marrow Peptide #1847 enco Peptide #1847 enco Peptide #1847 enco Peptide #1839 enco Human bone marrow Peptide #1847 enco Peptide #1857 enco Amino acid sequenc Human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic human granular provintetic macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop D3D4 polypeptide # enco Peptide # 1857 enco Peptide # 1857 enco Peptide # 1857 enco Peptide Human Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte macrop Granulocyte	86 6 1.1 124 21 AABO873 187 6 1.1 124 21 AAY8316 188 6 1.1 124 22 AAU49125 189 6 1.1 124 22 AAU5578 190 6 1.1 124 22 AAEO182 191 6 1.1 124 23 ABG6413 192 6 1.1 124 23 ABG3172 193 6 1.1 124 23 ABG3172

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Toxoplasma gondii.
Synthetic.
                                                                                 Eimeria maxima; 250 kDa antigen; sporozoite; merozoite; infection;
                                                                            vaccine; antiparasitic;
                                                                                            Toxoplasma gondii AMA1 amino acid sequence fragment.
                                                                                                        10-APR-2003
                                                                                                                             ABP56991 standard; Peptide; 86 AA
                                      16-JAN-2003
                                                 WO2003004684-A2
                06-JUL-2001; 2001US-303670P
                           03-JUL-2002; 2002WO-US21237
(WITC/) WITCOMBE D. (SMIT/) SMITH N C.
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Human testicular a
Human reproductive
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Helicobacter pylor
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Human ORF445 prote
Mature human Inter
Mature wild type h
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Human GMCSF polype
Sequence of human
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The present invention describes a nucleic acid (I) comprising a CC sequence encoding a 250 kDa polypeptide from Sporozoites/Merozoites of CC Eimeria maxima or its homologue or complement. Also described: (1) a cc vector; (3) a plasmid comprising the nucleic acid; (2) a host cell comprising the ecception of the nucleic acid; (2) a host cell comprising the comprising the nucleic acid; (3) producing a recombinant 250 kDa CC polypeptide; (6) a recombinant polypeptide; (7) a vaccine against CC E. tenella, E. accervalina, E. necatrix, E. praecox, E. maxima, E. mitis CC eross-reactive antigen; (8) immunising a subject against infection by CC enternal immunity against infection by CC maternal immunity against infection by Eimeria, or a microorganism expressing an immunologically cross-reactive antigen; (9) conferring upon a newborn subject of an avian species compating an avian species antigen; (9) conferring upon a newborn subject of an avian species (CC maternal immunity against infection by Eimeria; (10) a fertilised egg compating an avian species (1) has antiparasitic contivity and can be used in a vaccine and in gene therapy. The nucleic acid is useful for preparing a vaccine against E. tenella, E. accervalina, CC E. necatrix, E. praecox, E. maxima, E. mitis or E. brunetti infection.

The present sequence represents an amino acid sequence used in an example from the present invention.
   Query Match
Best Local Similarity
Matches 86; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New nucleic acid comprising a sequence encoding a 250 kDa polypeptide from sporozoites/merozoites of Eimeria maxima, useful for preparing a vaccine against Eimeria infection -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
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25-FEB-1999;
05-MAR-1999;
                                                                                                                                                                                                                                                              Arabidopsis thaliana protein fragment SEQ ID NO: 5315.
                                                                                                                                                                                                                                                                                                                                                                           AAG07963 standard; Protein; 39
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                                                     25-FEB-2000; 2000EP-0301439
                                                                                                                                                                                                              Protein identification; signal transduction pathway; metabolic pathway; hybridisation assay; genetic mapping; gene expression control; promoter;
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                                                                                                                                                           Arabidopsis thaliana
                                                                                                                                                                                                termination sequence.
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99US-0123180
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01-APR-1999
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                                                                                                                                                                Protein identification; signal transduction pathway; metabolic hybridisation assay; genetic mapping; gene expression control; termination sequence.
                                                                                           25-FEB-2000;
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                                                                                                                                                 Arabidopsis thaliana.
                                                                                                                                                                                                    Arabidopsis thaliana protein fragment SEQ ID NO: 62504.
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99US-0144325.
99US-0144331.
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S-0144334. S-0144335. S-0144352. S-0144632.

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RESULT 4
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28-OCT-1999;
29-OCT-1999;
                                                         Novel secreted protein 5' expressed diagnostic, forensic, gene therapy,
                    Claim 3; Page 625; 837pp; English.
                                                                                                                          WPI; 2000-038446/03.
N-PSDB; AAZ42345.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human; 5' EST; expressed sequence tag; secreted protein; diagnosis; gene therapy; chromosome mapping; upstream regulatory sequence; forensic; location; development; protein synthesis; stability; regulation; identification.
                                                                                                                                                                                         Dumas Milne Edwards
                                                                                                                                                                                                                                                                           09-APR-1998;
28-APR-1998;
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17 GVLLLALL 24
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99US-0160815

99US-0160881

99US-0160980

99US-01610980

99US-0161405

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98US-0069047.
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                                                            sequence tag sequences used in and chromosome mapping procedures
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99US-0144884 99US-0145086 99US-0145086 99US-0145087 99US-0145087 99US-0145087 99US-0145145 99US-0145218 99US-0145218 99US-0145218 99US-0145218 99US-0145218 99US-0145218 99US-014538 99US-014538 99US-0146386 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147303 99US-0147753 99US-0151066 99US-0151308 99US-0151303 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339 99US-0151339

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RESULT 5
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CC AAY605438 represent the EST-related proteins corresponding to AAZ4265 to
CAAY605438 represent the EST-related proteins corresponding to AAZ4265 to
CAAZ43052. The 5' ESTs can be used for producing secreted human gene
CC products. They can be used to identify and isolate 5' untranslated
CC regions (UTRs) and upstream regulatory regions which control the
CC location, development stage, rate, and quantity of protein synthesis, as
CC well as stability of mRNA. The ESTs are also useful as probes for
CC chromosome mapping, and to obtain full length cDNA clones. The ESTs can
CC diagnostic procedures to identify individuals, or in
CC diagnostic procedures to identify individuals having genetic diseases
CC resulting from abnormal gene expression. The products may also be used in
CC queed for directing extracellular secretion of a polypeptide can be
CC used for directing extracellular secretion of a polypeptide with the ESTs are appearances may be useful in
CC into a cell. The proteins encoded by the ESTs are appearances may be useful in
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Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eimeria maxima; 250 kDa antigen; sporozoite; merozoite; infection; vaccine; antiparasitic; gene therapy.
The present invention describes a nucleic acid (I) comprising a sequence encoding a 250 kDa polypeptide from Sporozoites/Merozoites Eimeria maxima or its homologue or complement. Also described: (1) a
                                                                                                                                                                                                                                                                        (WITC/)
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                                                                                                                           New nucleic acid comprising a sequence encoding a 250 from sporozoites/merozoites of Eimeria maxima, useful
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RESULT 6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
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The invention relates to an isolated polynucleotide encoding a polypeptide which is related to potato snakin antimicrobial protein GASA4 or GAST5 or GAST1 homologues, which is referred to as lysine-cysteine- rich peptides (KCP)-like polypeptide, having a nucleotide sequence from 36 sequences of defined base pairs, given in the
                                                                                                                                  New polynucleotide encoding lysine- and cysteine-rich peptides-like polypeptide useful for modulating the polypeptide level in a plant cell, enhancing disease resistance -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Antimicrobial; transgenic; plant; potato snakin antimicrobial protein; GASA4; GASA5; GAST1 homologue; lysine- and cysteine- rich peptide; KCP-like polypeptide; modulating; disease resistance.
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11-SEP-2001; 2001US-0950933.
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                                                                                                      Claim
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DB; AAL37842.
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ពួកក្រកួតក្រកួន
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                                                    Query Match
                                                                                                                                                                                                                                      The invention relates to an isolated nucleic acid detection reagent capable of detecting 1000 or more genes from Drosophila. The inventiuseful in developmental biology and in elucidating cell signalling cell-cell interactions in higher eukaryotes for the development of insecticides, therapeutics and pharmaceutical drugs. The invention discloses genomic DNA sequences (ABL30511), expressed DNA sequences (ABL01840-ABL16175) and the encoded proteins (ABB57737-ABB72072).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated nucleic acid detection reagent for detecting 1000 or more genes from Drosophila and for elucidating cell signalling and cell-cel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; SEQ ID NO 34968; 21pp + Sequence Listing; English
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11-JUL-2000; 2000US-0614150.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 17; Page 640-642; 874pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                identified using the method of the invention
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                                                                                                                                                                                                                                                                                       467
                                                                                                                                                                                                                                                                                                                                         8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       σ
                                                                                                                                                                                                                                                                                    LLLALLGG 474
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                                                                                                                                                                                                                                 95
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                                                                                                                                                                                                                                                                                                                                                                       1.5%;
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Pred. No.
                                                                                                                                                                                                                                                                                                                                                  Mismatches
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                                                                                                                                                                                                                                                                                                                                                           DB 35;
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27-MAR-2001

(first entry)

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RESULT 10
AAG74269
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                    antidiabetic; antiinflammatory; antiulcer; vulnerary; anticonvulsant; antibacterial; antifungal; antiparasitic and cardiant activity. The polynucleotide and protein sequences are used in the diagnosis of cancer, particularly breast and ovarian cancer. The nucleic acid sequences, proteins, agonists and agonists may also be used in the diagnosis, prevention and treatment of immune disorders e.g. Addison's disease, allergies, autoimmune haemolytic anaemia, autoimmune thyroiditis, disbetes mellitus, Crohn's disease, multiple sclerosis, rheumatoid arthritis and ulcerative colitis; cardiovascular disorders such as myocardial ischaemias; wound healing; neurological diseases such as cerebral anoxia and epilepsy; and infectious diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequences AAF21614 - AAF22031 represent DNA sequences encoding human proteins AAB58711 - AAB59128. The DNA and protein sequences are associated with breast and ovarian cancer. Included in the invention are sequences AAF22032 - AAF22040 and AAB59129 which are used in the isolation and characterisation of the DNA and protein sequences of the invention. The breast and ovarian cancer associated DNA, protein, agonist or antagonist sequences exhibit cytostatic; immunosuppressive; nootropic; neuroprotective; antiviral; antiallergic; hepatotropic;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New human breast and ovarian cancer associated gene sequences and the polypeptides encoded by these genes, useful in the prevention, treatment and diagnosis of cancer, immune disorders, cardiovascular disorders and neurological diseases -
AAG74269
                                       AAG74269 standard; Protein; 255 AA.
                                                                                                                                                                                                                                                                                                   Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cardiovascular disorder; wound
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Addison's disease; allergy; autoimmune haemolytic anaemia; autoimmune thyroiditis; diabetes mellitus; Crohn's disease; multiple sclerosis; rheumatoid arthritis; ulcerative colitis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nootropic; neurpprotective; antiviral; antiallergic; hepatotropic; antidiabetic; antiinflammatory; antiulcer; vulnerary; anticonvulsant; antibacterial; antiiungal; antiparasitic; cardiant; immune disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; breast cancer; ovarian cancer; cytostatic; immunosuppressive;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Breast and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HUMA-) HUMAN GENOME SCI INC
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                                                                                                                                                                             GSLSEETP 386
                                                                                                                                                                                                                                                                                                 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ovarian cancer associated antigen protein sequence
                                                                                                                                                                                                                      Conservative
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                                                                                                                                                                                                                                       1.5%; Score 8; DB 21; 100.0%; Pred. No. 41;
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RESULT 11
AAY00923
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Best Local
                                                                                                                                                                                                                                                                                                                                                                             the proteins are collectively known as colon cancer antigens. The colon cancer antigens have cytostatic activity and can be used in gene therapy and vaccine production. N and P may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate P expression. For example, N and P may be used to treat disorders associated with decreased expression by rectifying mutations or deletions in a patient's genome that affect the activity of P by expressing in a patient's genome that affect the patients own production of P. Additionally, N may be used to produce the colon cancer-associated P, by inserting the nucleic acids into a host cell and culturing the cell to express the proteins. N and P can be used in the prevention, diagnosis and treatment of colorectal carcinomas and cancers. AAH37196 to AAH37204 and AAB77789 represent sequences used in the exemplification of the
                                                                                                                                                                                                                                                                                                                         N.B. Pages 666 to 682 and page 7053 of the sequence listing were missing at time of publication, meaning no sequences are present SEQ ID NO:1027 to 1052, 7921 and 7922.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human colon cancer antigen
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                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                    present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer-associated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 11; Page 6764-6765; 9803pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nucleic acids encoding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2001-235357/24.
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03-NOV-1999;
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                                                      28-MAY-1999
                                                                                  AAY00923;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        useful for preventing,
                                                                                                              AAY00923
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                                                                                                                                                                                                               466 VLLLALLG 473
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                                                                                                                                                                                                                                        Similarity
8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     to AAH37195 and AAG73514 to AAG77788 represent human speciated nucleic acid molecules (N) and proteins (P),
                                                                                                            standard;
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                                                                                                                                                                                                                                                                                                  255 AA;
                                                                                                                                                                                                                                           Conservative
                                                      (first entry)
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99US-0163280.
                                                                                                              Protein;
                                                                                                                                                                                                                                                       1.5%; Score 8; DB 2
100.0%; Pred. No. 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        diagnosing
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer antigen; diagnosis; detection;
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                                                                                                                                                                                                                                           0
                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        colon cancer-associated polypeptides,
and/or treating colorectal cancers -
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                                                                                                                                                                                                                                                                      DB 22;
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                                                                                                                                                                                                                                                                      Length 255;
                                                                                                                                                                                                                                             Indels
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CLAR1; human; late stage-specific marker; prostate cancer progression;

Alternatively spliced Human CLAR1 protein sequence

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                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local
                                                                 Human; transcription factor 29.26; gene therapy; cytostatic; virucidal; immunomodulatory; antiinflammatory; haemostatic; malignant tumour;
                                                                                                                                                                                                                  AAM48706 standard; Protein; 266 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Newly isolated CLAR1 nucleic acid molecule (including complements and allelic variants) encoding a polypeptide - useful as a late stage-specific marker for the prognosis and diagnosis of prostate
                                               human immunodeficiency virus; HIV;
                                                                                                                 Human transcription factor
                                                                                                                                                    21-MAR-2002
                                                                                                                                                                                    AAM48706;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cancer progression
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-AUG-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      cancer susceptibility; diagnosis; therapy.
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                                                                                                                                                                                                                                                                                                                                           379
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8; Conserv
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                                                                                                                                                                                                                                                                                                                                                                     100.0%; 1
                                                                                                                                                   entry)
                                                                                                                                                                                                                                                                                                                                                                         ; Score 8; DB 2
b; Pred. No. 44;
0; Mismatches
                                                                                                                   29.26.
                                                 infection;
                                                                                                                                                                                                                                                                                                                                                                                           DB 20;
                                                 immunological
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                                                                                                                                                                                                                                                                                                                                                                                                         Length 256;
                                                                                                                                                                                                                                                                                                                                                                         Indels
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RESULT 13
AAY00922
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Best Local S
Matches
Newly isolated CLAR1 nucleic acid molecule (including and allelic variants) encoding a polypeptide - useful stage-specific marker for the prognosis and diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates to human transcription factor 29.26 with cytostatic, virucidal, immunomodulatory, antiinflammatory and haemostatic activity. The protein and encoding polynucleotide are us in diagnosis and treatment of malignant tumour, haemopathy, human immunodeficiency virus (HIV) infection, immunological diseases and various inflammations. The polynucleotide is useful in gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human transcription factor 29.26 and encoding polynucleotide, diagnosis and treatment of malignant tumours, haemopathy, huma immunodeficiency virus infection, immunological diseases and inflammation -
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                                                                           Rondinelli R,
                                                                                                                      13-AUG-1997;
                                                                                                                                                                                                                                             CLAR1;
                                                                                                                                                                                                                                                                 Human CLAR1 protein sequence
                                                                                                                                                                                                                                                                                         28-MAY-1999
                                                                                                                                                                                                                                                                                                              AAY00922;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
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                                            N-PSDB;
                                                       WPI; 1999-181061/15.
                                                                                                                                            13-AUG-1998;
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                                                                                                                                                                                       WO9909215-A1.
                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                   AAY00922 standard; Protein; 276
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                                                                                                 (FOXC-) FOX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO200192515-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (SHAN-) SHANGHAI BIOWINDOW GENE DEV INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2002-090044/12.
                                                                                                                                                                                                                                                                                                                                                                                         116
                                                                                                                                                                                                                                                                                                                                                                                                         384 ETPNFIIP 391
                                                                                                                                                                                                                                human; late stage-specific
susceptibility; diagnosis;
                                                                                                                                                                                                                                                                                                                                                                                                                                  8; Conserv
                                             AAX27245.
                                                                                                                                                                                                                                                                                                                                                                                         ETPNFIIP 123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               266 AA;
                                                                                                 CHASE CANCER CENT
                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                        (first entry)
                                                                            Tricoli JV
                                                                                                                      97US-0055285.
                                                                                                                                            98WO-US16768.
                                                                                                                                                                                                                                                                                                                                                                                                                                              1.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 8; DB 2; Pred. No. 45; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                     0
                                                                                                                                                                                                                               marker; prostate therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        23;
                                                                                                                                                                                                                                                                                                                                                                                                                                  0,
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length
                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                           cancer progression;
y complements
Las a late
of prostate
                                                                                                                                                                                                                                                                                                                                                                                                                                                         266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                , human
                                                                                                                                                                                                                                                                                                                                                                                                                                 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    are used
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      used
                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
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RESULT 14
AAP60577
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CC This sequence is the human CLAR1 of the invention. CLAR1 was Cisolated from a human adult heart cDNA library and is a late colored from a human adult heart cDNA library and is a late colored from a human adult heart cDNA library and is a late colored from a human adult heart cDNA library and is a late colored from a human adult heart cancer progression. The CLAR1 nucleic acid molecules (including oligonucleotides as probes/primers) and cantibodies against CLAR1 form kits for detecting expression of the CLAR1 colored gene associated with a susceptibility to cancer. The nucleic acids are also useful for identifying and characterising related genes from other species. They are useful for identifying genes encoding proteins that colored with CLAR1, which facilitates further study of the role of these cellular signalling mechanisms in cancer progression. The nucleic acids are also useful for controlling CLAR1 protein production. The CLAR1 colored are useful in screening for molecules (especially cantibodies) that affect or modulate its activity or function. Such colecules may be therapeutically useful. The isolated CLAR1 nucleic acid colored enables the generation of a transgenic animal, which can be cused as a model for prostate cancer to allow screening and identification of compounds for the treatment of prostate cancer. Such an animal contains the content of prostate cancer and that of a normal contains and the cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer animal cancer 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local
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The antigenic protein binds with an antibody antigenic protein of avian coccidia, (esp. a
                                                                                                                                                                                                                                                                                                     19-JUN-1985;
05-JUL-1984;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eimeria tenella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Antigen; vaccine;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eimeria tenella 5401 sporozoite antigen.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25-MAR-2003
31-JUL-1991
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAP60577;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 13; Page 44; 70pp;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cancer progression
                                                                                                                                                                                                                                                                                                                                                               05-JUL-1985;
                                                                                                                                                                                                                                                                                                                                                                                                      30-JAN-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAP60577 standard;
                                                            Claim 42;
                                                                                                                                                                N-PSDB; AAN60488
                                                                                                                                                                                                                                                                                                                                                                                                                                              W08600528-A
                                                                                               New cloned gene expressing Eimeria antigen for protecting poultry against coccidiosis
                                                                                                                                                                                  WPI; 1986-042037/06.
                                                                                                                                                                                                                          Anderson DM,
                                                                                                                                                                                                                                                             (GEMX ) GENEX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           174
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8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GSLSEETP 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GSLSEETP 386
                                                            Fig 1; 82pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.5%;
Larity 100.0%;
Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (updated)
(first entry)
                                                                                                                                                                                                                                                               CORP
                                                                                                                                                                                                                          McCandliss
                                                                                                                                                                                                                                                                                                   85US-0746520.
84US-0627811.
                                                                                                                                                                                                                                                                                                                                                                 85WO-US01274.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         poultry;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Protein; 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fowl; avian coccidiosis; immunization
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 8;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 20;
  directed against an protein of E.tenella
                                                                                                                        useful in vaccines
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RESULT 15
AAR05216
ID AAR05
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Query Match
Best Local Similarity
Thes 8; Conserve
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Best Local S
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sporozoite). It may be used for immunising birds against avian coccidiosis. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                   They are antigenic proteins (AP) which bind with a monoclonal antib (MAb) or polyvalent Ab directed against an AP of avian coccidia. (I all an apprehension vector contents their cloned gene, and host cells are an expression vector contents. Their cloned gene, and host cells transformed with the vector. The transformed cells are used in a vaccine to immunise birds against avian coccidiosis. By labelling peptides, they can be used as a type-specific probe. They may also used in an assay to detect Ab against the coccidia. The Abs are us identify transformed cells conte, the DNA. (Updated on 25-MAR-2003 to correct PA field.)
                                                                                                                                                                                                                                               Cloned gene or fragment encoding antigenic protein - which binds with antibodies against avian coccidia, a transformed cells used in vaccine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eimeria tenella.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eimeria tenella; antigen GX5401; antigen GX3264; avian coccidiosis.
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02-AUG-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR05216;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR05216 standard; protein; 287
                                                          Sequence
                                                                                                                                                                                                                         Claim 1; Page 93; Fig 1; 134pp; English
                                                                                                                                                                                                                                                                                                 N-PSDB; AAQ03317.
                                                                                                                                                                                                                                                                                                             WPI; 1990-051586/07.
                                                                                                                                                                                                                                                                                                                                                                                       05-JUL-1988;
                                                                                                                                                                                                                                                                                                                                                                                                                05-JUL-1989;
                                                                                                                                                                                                                                                                                                                                                                                                                                      25-JAN-1990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Antigens
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Peptide
                                                                                                                                                                                                                                                                                                                                                               (GEMX ) GENEX
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8; Conservative
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                                                                                                                                                                                                                                                                                                                                      Д,
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                                                             287 AA;
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(first ent
                                                                                                                                                                                                                                                                                                                                                               CORP.
                                                                                                                                                                                                                                                                                                                                       McCandliss
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                                                                                                                                                                                                                                                                                                                                                                                       88US-0215162
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="AA sequence of GX3264"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="AA sequence of GX5401"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          entry)
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Pred.
                                                                                                                                                                                                                                                                                                                                      Strausberg
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Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cDNA of Eimeria tenella oocyte
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 7
                                                                                                                                                                                                                                                                                                                                       SL,
                                                                                                                        cells are used in a liosis. By labelling the probe. They may also be
                                                                                                                                                                                                                                                                                                                                       Strausberg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
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                                                                                                              They may also be The Abs are used
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                                                                                                                                                                                                   antibody
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1.5%; Solidarity 100.0%; Conservative 0;

score 8; DB 1; Pred. No. 48; 0; Mismatches

DB 11; o. 48;

Length 287; Indels

0

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Gaps

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RESULT 17
AAY96733
ID AAY96
XX
AC AAY96
XX
AC AAY96
XX
DT 26-SE
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                                                                                                                                                               Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                      This sequence is of a secreted polypeptide, designated zsig15, which is a marker for differentiation in normal and tumour cells (particularly epithelial cells and derived tumours of colon, breast and prostate). The zsig15 protein is useful for the promotion of growth and development of epithelial cells, to identify specific (ant) agonists, also where conjugated to a toxin, to deliver these to cells expressing the cognate receptor (e.g. to kill cells of blood, colon, breast and bone marrow cancers), and to identify/isolate receptors involved in cancer metastases. The sequence was isolated from a colon cancer library after screening an EST (expressed sequence tag) database for sequences containing putative secretion signal sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                      New nucleic acid encoding secreted polypeptide zsig15 - used as marker for tumour cells, useful for diagnosis and treatment of cancers, inflammation and hyperplasia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Grossmann A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Secretion; differentiation marker; tumour; epithelial cell; colon; blood; breast; prostate; growth; development; antagonist; receptor; bone marrow; cancer; metastasis.
 26-SEP-2000
                          AAY96733;
                                                  AAY96733 standard; Protein; 437
                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                               Claim 16; Page 81-84; 100pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 06-MAY-1997;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human tumour
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                                                                                                                                        466
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                                                                                                                                        VLLLALIG 473
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                                                                                                                                                                                                                  437
                                                                                                                                                                 Conservative
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 (first entry)
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                                                                                                                                                               1.5%; Score 8; DB ;
100.0%; Pred. No. 71,
tive 0; Mismatches
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                                                                                                                                                                             DB 20;
o. 71;
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                                                                                                                                                                                        Length 437
                                                                                                                                                                Indels
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                                                                                                                                                               Gaps
                                                                                                                                                               0;
 A H X S X E X S X E X
           22-DEC-1998;
12-JAN-1999;
12-JAN-1999;
12-JAN-1999;
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                                                             16-DEC-1998;
16-DEC-1998;
                                                                                                   01-DEC-1999;
                                                                                                                           22-JUN-2000.
                                                                                                                                                 WO200036102-A2
                                                                                                                                                                                         Modified-site
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                                               98US-0112851.
98US-0113145.
98US-0113511.
 99US-0119341
          99US-0115565
99US-0115733
                                   99US-0115558
                                                                                                   99WO-US28634
                                                                                                                                                                                        /note= "1
419..424
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                                                                                                                                                                                                                                                                    382..385
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RESULT 18
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12-FEB-1999;
02-JUN-1999;
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                                                                       Pah1
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
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N-PSDB; AAA51263.
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                                         N-PSDB;
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                                                                                                                                                                                                                               PRV-1; human;
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        polycythemia rubra vera-related polypeptide useful for diagnosis for developing therapeutic antibodies -
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detection; diagnosis.
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canabe CK;
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                                                                                                                                                                                                                                                                                                                                                                                                                                               26-JUN-1998;
31-JUL-1998;
01-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; signal peptide-containing protein; HSPP; diagnosis; cancer; inflammation; cardiovascular disease; anticancer; anti-inflammatory; antimicrobial; nootropic; neuroprotective; cardiovascular; hepatotropic; antiaethmatic; gene therapy; cell proliferation; neurological disorder; reproductive disorder; developmental disorder; arteriosclerosis; cirrhosis; psoriasis; acquired immune deficiency syndrome; anaemia; asthma; Crohn's disease; infection; Alzheimer's disease; schizophrenia; parkinson's disease; Huntington's diseases; ovulatory defect;
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                                                                                         New human signal peptide-containing proteins useful in treatment, prevention and diagnosis of e.g. cancer, inflammation and cardiovascular disease -
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                                              Claim 1;
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N-PSDB; AAZ98146.
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                                           Page 185-186; 327pp; English.
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Au-Young J,
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98US-0094983.
98US-0102686.
98US-0112129.
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H, Patterson C, Reddy
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R, Hillman JL;
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AAZ98109 to AAZ98242 encode AAY87224 to AAY87357 which represent the

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RESULT 20
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from natural
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98US-0091628.

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The invention provides membrane-bound PRO polypeptides and polymucleotides encoding them. The PRO sequences of the invention were conditive described based on extracellular domain homology screening. The PRO sequences have homology with proteins including LDL receptors, TIE concludes and various enzymes. The membrane-bound proteins and receptor conditions are useful as pharmaceutical and diagnostic agents. Receptor conditions, for instance, can be used as therapeutic agents to block comployed for screening of potential peptide or small molecule inhibitors confident receptor/ligand interaction. The PRO encoding sequences are useful as hybridization probes, in chromosome and gene mapping and in the generation of antisense RNA and DNA. PRO nucleic acid sequences will also be useful for the preparation of PRO polypeptides, especially conditioned.
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04-AUG-1998;
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Wood WI,
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                                                                                                                                                                                       Membrane-bound proteins and related nucleotide sequences
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DB; AAZ65083.
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Yuan
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Matches
                                         Baker KP,
Gerritsen M
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31-MAR-2000;

17-MAY-2000;

22-MAY-2000;
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20-DEC-1999;
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01-DEC-1999;
02-DEC-1999;
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                                                                                                                                                                                                                                                                                                                                                                                                                                 Human secretory and transmembrane; PRO; mammalian; cancer; lung; breast; prostate; cervical; tumour necrosis factor-alpha; TNF-alpha; cartilage; ear; proliferation; glucose; free fatty acid; skeletal mu adipocyte; A-peptide; factor VIIA; gene therapy.
               WPI; 2001-408281/43.
N-PSDB; AAS21476.
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18-FEB-2000;
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06-JAN-2000;
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Isolated, secretory, and transmembrane PRO polypeptide used to detect
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8; Conserv
                                                                                 GENENTECH INC.
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                                                       ME,
                                             Stewart
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                                                     Beresini M,
E, Goddard
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2000WO-US00376.

2000WO-US003565.

2000WO-US04341.

2000WO-US04414.

2000WO-US04414.

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2000WO-US05001.

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2000WO-US15264.
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99WO-US28634.
99WO-US28551.
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                                              Deforge L, Desnoyers L,
A, Godowski PJ, Gurney
Tumas D, Watanabe CK, W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 8;
Pred. No.
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RESULT 22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           breast, prostate, rectal, cervical or liver tumours by comparing PRO

polypeptide expression in a cell sample to that in a control sample.

Come of the 275 sequences are also useful to stimulate, the release of tumour necrosis factor-alpha (TNP-alpha) from human blood, the proliferation or differentiation of chondrocytes, the proliferation or gene expression in pericyte cells, the release of proteoglycans from cartilage, the proliferation of inner ear utricular supporting cells or of T-lymphocytes, the release of a cytokine from peripheral blood monocytes (PBMCs), or the proliferation of endothelial cells. Some of the PRO polypeptides may modulate glucose or free fatty acid uptake by skeletal muscle cells or by adipocytes; or inhibit binding of A-peptide to factor VIIA. The PRO polypeptides can be used in assays to identify molecules involved in binding interactions. The polynucleotides encoding PRO polypeptides can be used to generate probes, antisense RNA/DNA, cransgenic or knock out animals and can be used in gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
           New cloned PRV-1 gene associated with polycythemia rubra vera, e.g. useful for preparing antisense molecules or polypeptides for treatment or diagnosis of disorders of the hematopoietic system -
                                                                                                                                                                                                                                                                                                                                                                                    PRV-1; human; hemostatic; polycythemia rubra vera; antisense therapy; treatment; diagnosis; pancytopenia; bone-marrow; blood; growth factor; pancytopathy; hematopoietic system disorder.
                                                                                                                                         Pahl
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAU12172-AAU12446 represent novel human secretory and transmembrane PRO polypeptides. The PRO polypeptides are useful to detect other PRO polypeptides, to link bloactive molecules to cells expressing PRO polypeptides, to modulate bloogical activities of cells expressing PRO polypeptides, and to detect the presence of mammalian lung, colon, breast, prostate, rectal, cervical or liver tumours by comparing PRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       other PRO polypeptides, link bioactive molecules to cells expressing PRO polypeptides, and detect the presence of mammalian tumours e.g. lung, breast, prostate, cervical -
                                                                                     N-PSDB;
                                                                                                    WPI; 2001-246167/26
                                                                                                                                                                       (UNIV-) UNIVERSITAETSKLINIKUM FREIBURG
                                                                                                                                                                                                            30-SEP-1999;
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                                                                                                                                                                                                                                                                                                                   DE19947010-A1
                                                                                                                                                                                                                                                                                                                                                        Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human PRV-1 protein
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8; Conserv
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RESULT 23
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                         18-FEB-2000;
22-FEB-2000;
24-FEB-2000;
24-FEB-2000;
24-FEB-2000;
02-MAR-2000;
15-MAR-2000;
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                                                                                                                                                                                                                                                                    05-JAN-2000;
06-JAN-2000;
                                                                                                                                                                                                                                                                                                                                                                                                              30-NOV-1999
01-DEC-1999
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20-DEC-1999
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cell death; cancer; chromosomal mapping; gene mapping; tissue typing;
diagnostic assay.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human; secreted and transmembrane protein; PRO; cytostatic;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim
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                                                                                          2000WO-US00219.
2000WO-US00376.
2000WO-US03565.
2000WO-US04341.
2000WO-US04341.
2000WO-US04914.
2000WO-US05004.
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                                2000WO-US05841.
2000WO-US06884.
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                                                                                                                                                                                                                                                                                                                                             99WO-US30095.
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99WO-US21547.
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99WO-US28313.
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99US-0146222.
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99US-0141037.
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Pred. No.
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5. 71;
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RESULT 24
ABG31399
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Matches 8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ashkenazi AJ, Baker KP, Botstein D, Desnoyers L, Eaton
Ferrara N, Fong S, Gerber H, Gerritsen ME, Goddard A,
Grimaldi CJ, Gurney AL, Kljavin IJ, Napier MA, Pan J,
Roy MA, Stewart TA, Tumas D, Watanabe CK, Williams PM,
                                                                                                                                 Human; secreted and transmembrane polypeptide; PRO polypeptide; T-lymphocyte proliferation; inflammatory disease; rheumatoid arthritis; inflammatory bowel disease; Sjogren's syndrome; thyroiditis; autoimmune haemolytic anaemia; diabetes mellitus; multiple sclerosis; hepatitis; contact dermatitis; allergic disease; psoriasis; virucide; immune related disease; kidney disease; antiinflammatory; antithyroid; antirheumatic; antiarthritic; immunosuppressive; antianaemic; antiataemic; neuroprotective; hepatotropic; antiinflammatory; dermatological; antiallergic; antipsoriatic; PRO1863.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            used to develop and screen therapeutically useful reagents. The PRO nucleotide and protein sequence can be used for tissue typing and in treating cancer. Anti-PRO antibodies can be used in diagnostic assays. AAF44270 to AAF44470 represent PCR primers and hybridisation probes used in the isolation of human PRO sequences. AAF44087 to AAF44269 and AAB65154 to AAB65300 represent human PRO polynucleotide and protein sequences given in the exemplification of the present invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sequences, and their fragments, can be used as hybridisation probes, in chromosomal and gene mapping, and in the generation of anti-sense RNA and DNA. They may also be used to produce transgenic animals which are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    can
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N-PSDB; AAF44229.
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8; Conserv
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22-FEB-2000;
02-MAR-2000;
30-MAR-2000;
30-MAY-2000;
02-JUN-2000;
01-DEC-2000;
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01-DEC-1999;
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22-DEC-1998,
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12-JAN-1999;
09-FEB-1999;
10-FEB-1999;
12-FEB-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (PRO) and nucleic acids of the invention. The polypeptides can be administered therapeutically, especially by expressing encoding polymucleotides, e.g. in therapeutic compositions. They can be used to screen for PRO polypeptide antagonists and agonists useful to identify drug candidates. They can also be used to produce antibodies, useful to detect PRO polypeptides (e.g. diagnostically), purify PRO polypeptides or therapeutically (e.g. as antagonists or to target and/or deliver cytotoxic agents). The polymucleotides are useful therapeutically e.g. to produce antisense sequences to inhibit polypeptide production. They can be used to produce probes and primers useful to detect or isolate sequences from other species. They are also useful for gene mapping and to generate transgenic animals. ABG91355-ABG91363 represent human PRO
                                                                                                                                                                                                               Human; secreted and transmembrane protein; PRO1800; PRO539; PRO92; PRO1434; PRO1863; PRO1917; PRO1868; PRO3434; PRO1927; inflammatory disorder; immune related disease; rhematoid arthritis; systemic lupus erythematosus; systemic sclerosis; thyroiditis; autoimmune haemolytic anaemia; diabetes mellitus; infectious hepatitis; psoriasis; allergic disease of the lung; graft-versus host disease;
                                                                                                                                                                                                                                                                                                                                                                                                          Human secreted protein PRO1863.
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                                                                                                                                                                                        tumour; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-NOV-2002 (first entry)
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DB; ABS67458.
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an J, Roy MA,
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99US-115733P.
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                                                                                                                                            The invention relates to an isolated polypeptide having at least 80% CC amino acid sequence identity to secreted and transmembrane polypeptides CC PRO1800, PRO539, PRO982, PRO1434, PRO1863, PRO1917, PRO1868, PRO3434 or CC pRO1927 and their encoding nucleic acids. Also included are vectors, host CC cells and antibodies against PRO polypeptides. PRO proteins are useful for identifying modulators of the polypeptide. PRO1868 useful for the CC diagnosis and treatment of inflammatory and immune related diseases including systemic lupus erythematosus, rheumatoid arthritis, systemic constructions, autoimmune haemolytic anaemia, thyroiditis, diabetes mellitus, inference in the separatis, psoriasis, allergic diseases of the lung and CC graft-versus host disease and tumours. Pro nucleic acids are useful for constructing hybridisation probes for mapping the gene that encodes that CC graft of the generation probes for mapping the gene that encodes that CC and for the generatically useful reagents. PRO nucleic acids are useful and screening of therapeutically useful reagents. PRO nucleic acids are useful for gene therapy, chromosome identification, and tissue constructing proteins are useful as molecular weight markers for protein celectrophoresis purposes. The anti-PRO antibodies are useful in CC diagnostic assays for PRO, e.g. detecting its expression in specific cells, tissues or serum and for affinity purification of PRO.

The present sequence represents a PRO protein.
                                                          Query Match
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Matches 8
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01-DEC-1999;
02-DEC-1999;
11-FEB-2000;
22-FEB-2000;
02-MAR-2000;
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Gurney AL,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Novel secreted and transmembrane polypeptides and polynucleotides useful for diagnosis and treatment of inflammatory disorders and immune-related diseases, and identifying modulators -
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N-PSDB; ABS68390.
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16-DEC-1998
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                       466 VLLLALLG 473
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8; Conservative 0;
VLLLALLG
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2000WO-US03565
2000WO-US034414
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an J, Roy
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99WO-US28634.
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, Stewart TA,
                                                            Score 8; DB 2; Pred. No. 71; 0; Mismatches
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71;
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A, Tumas
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D, Wa
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Watanabe CK;
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RESULT

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The invention relates to one hundred and twenty two nucleic acids composed in the invention relates to one hundred and twenty two nucleic acids composed proteins. The sequences of the 122 PRO polypucides, composed proteins. The PRO nucleic acids, polypeptides, composed antagonists are useful for treating a PRO related disorder. The PRO polypeptides are useful for diagnosing tumours, especially lung cancer, colon cancer, breast tumour, prostate tumour, rectal tumour or liver tumour. The PRO polypeptides are useful for stimulating the proliferation of, or gene expression, in pericyte cells, for stimulating the release of tumour necrosis factor-alpha from human blood, for stimulating or inhibiting the proliferation of normal human dermal fibroblast cells. The PRO polypeptide may also be used as molecular weight markers and for tissue typing. The PRO nucleic acids have applications in molecular biology, including use as hybridisation probes,
                                                                                                                                                                                                                                                                                                                                                                     Baker KP,
Grimaldi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; secreted protein; PRO; tumour; lung cancer; colon cancer; breast cancer; prostate tumour; rectal tumour; liver tumour; pericyte cell proliferation; chondrocyte cell proliferation; tumour necrosis factor-alpha.
                                                                                                                                                                                                                                                    One hundred and twenty two nucleic acids encoding PRO polypeptides, useful for treating a PRO related disorder and for diagnosing tumours such as lung cancer, colon cancer, breast tumour, prostate tumour, rectal tumour or liver tumour -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human PRO protein,
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20-DEC-2000;
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01-DEC-2000;
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15-SEP-2000;
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25-JUL-2000;
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C, Gurney
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2000US-220893P.
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                                                                                                                                                                                                                         359pp; English.
                                                                                                                                                                                                                                                                                                                                                                      Gerritsen ME, Goddard A, Godowski Smith V, Stephan JF, Watanabe CK,
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RESULT 28
AAG80767
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         This invention describes the human neutrophil antigen-2a (HNA-2a, previously described as NB-1), expressed on neutrophilic granulocytes. The nucleic acid and amino acid sequences of NHA-2a are used in RNA- or DNA-based methods of antigen determination, e.g. polymerase chain reaction with sequence-specific primers, hybridisation with sequence-specific or DNA sequencing. They are also used for recombinant production of the antigen for detection of specific alloantibodies. Allo- and auto-antibodies against HNA-2a are implicated in neonatal immunoneutropaenia, transplant associated acute pulmonary insufficiency, immunoneutropaenia after bone marrow transplant, its nucleic acid, for diagnosis, overcomes the stability problems or its nucleic acid, for diagnosis, overcomes the stability problems
                                                                                                                                                                                                                                                                                      WPI;
                                                                                                                                                                                       Disclosure; Page 4-6;
                                                                                                                                                                                                                  neutropenia
                                                                                                                                                                                                                             Primary structure and nucleic acid of the human neutrophil antigen-2a, useful for antigen detection, e.g. diagnosis of various forms of
                                                                                                                                                                                                                                                                                                              Bux J,
                                                                                                                                                                                                                                                                                                                                                                   09-JUN-2000; 2000DE-1028725
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human neutrophil antigen-2a; NB-1 antigenic determination; diagno alloantibody detection; neonatal; immunoneutropaenia; iatrogenic; transplant-associated acute pulmonary insufficiency; bone marrow transplant; autoimmunoneutropaenia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; neutrophilic granulocyte; chromosome human neutrophil antigen-2a; NB-1 antigenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human granulocyte HNA-2a antigen.
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                                                                                                                                                                                                                                                                                                                                         (BUXJ/)
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22..437
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 transport of
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very unstable granulocytes.
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01-SEP-1999;
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14-MAY-1999
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20-NOV-1998
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10-SEP-1998;
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99WO-US28214.
99WO-US28313.
99WO-US28409.
99WO-US28301.
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99WO-US0615.
99WO-US1073.
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99WO-U$28551.
99WO-U$28564.
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98WO-US19177.
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29-JUN-2001

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105-APR-2001

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02-JUN-2000;
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23-AUG-2000;
24-AUG-2000;
08-NOV-2000;
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20-MAR-2000
30-MAR-2000
31-MAR-2000
31-MAR-2000
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30-DEC-1999;
05-JAN-2000;
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20-DEC-1999;
22-DEC-1999;
WPI; 2003-332040/31.
N-PSDB; ACA03835.
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                                                                                                             GENENTECH INC
                                           , Beresini M,
n ME, Goddard
Stewart TA,
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2000WO-US00277
2000WO-US00376
2000WO-US03565
2000WO-US04341
2000WO-US043414
2000WO-US044144
                                                                                                                                         2001US-0808689
2001US-0816744
2001US-0828366
2001US-0854208
2001US-0860216
2001US-08660216
2001US-0866024
2001US-0866034
2001US-0872035
2001US-0872035
2001US-088736
2001US-088737
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2001US-0931836
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2001US-0796498.
2001US-0802706.
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2001WO-US21066.
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                                              A, Godov
                                                DeForge L, Desnoyers L, Filva
A, Godowski PJ, Gurney AL, Sh
Tumas D, Watanabe CK, Wood WI,
                                                             Filvaroff E,
L, Sherwood
                                              rwood S;
Zhang Z;
                                                                               Gao
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to the isolation of novel human PRO CC polypeptides, and the polynucleotide sequences encoding them. The CC polypeptides are useful for detecting other PRO polypeptides are useful for detecting other PRO polypeptides, for CC linking bioactive molecules to cells expressing PRO polypeptides, for CC for modulating biological activities of cells expressing PRO polypeptides, CC for modulating biological activities of cells expressing PRO polypeptides, and for for identifying agonists or antagonists. CC tumour necrosis factor (TNF)-alpha from human blood, for stimulating the release of CC tumour necrosis factor (TNF)-alpha from human blood, for stimulating the proliferation or differentiation of chondrocytes, and detecting the presence of tumours. The polynucleotide sequences encoding PRO polypeptides are useful as hybridisation probes, in chromosome and CC gene mapping, in the generation of antisense RNA and DNA, in the gene mapping, in the generation of antisense RNA and DNA, in the conclosuration of PRO polypeptides, for generating transgenic animals or knockout animals, for the genetic analysis of individuals with genetic CC disorders, and in gene therapy. ABU66570-ABU66844 represent the human CC RNO polypeptides of the invention.

CC Note: The sequence data for this patent was obtained in electronic CC format directly from the USPTO web site at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local S
Matches 8
                14-SEP-1998;
14-SEP-1998;
14-SEP-1998;
16-SEP-1998;
                                                                              31-MAR-1997;
12-JUN-1998;
14-JUL-1998;
28-AUG-1998;
10-SEP-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New secreted and transmembrane PRO nucleic acids, useful for gene therapy, in chromosome and gene mapping, as chromosome markers, in tissue typing, and in chromosome identification -
                                                                                                                                                                                                                                                                                                       Human; secreted protein; transmembrane protein; PRO; inflammatory disease; organ failure; atherosclerosis; cardiac injury; infertility; birth defects; premature aging; AIDS; biosensor; acquired immunodeficiency syndrome; cancer; diabetic complication; bioreactor; tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                      Human secreted/transmembrane, PRO, protein SEQ ID 466
                                                                                                                                                                                                                                                                                                                                                                                                                                         27-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABU67078;
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8; Conserv
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 98WO-US12456.
98WO-US14552.
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98WO-US19093.
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b; Pred. No. 71;
0; Mismatches
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71;
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Baker KP, Gerritsen Smith V,

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22-FBB 2000
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10-MAR-1999
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                  2001WO-US20116.
2001WO-US21066.
2001WO-US21735.
2000US-0747259.
2001US-0796498.
2001US-0802706.
2001US-0808689.
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2001WO-US17800
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2001WO-US06520
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99WO-US30911.
99WO-US30999.
99WO-US30720.
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99WO-US28301.
99WO-US28634.
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99WO-US10733.
99WO-US12252.
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99WO-US05028.
99WO-US05190.
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99WO-US20944.
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98WO-US25108
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05-APR-2001; 2001US-0828366.

10-MAY-2001; 2001US-0854208.

10-MAY-2001; 2001US-0854280.

18-MAY-2001; 2001US-0860216.

25-MAY-2001; 2001US-0866028.

25-MAY-2001; 2001US-0866028.

01-UUN-2001; 2001US-0873035.

01-UUN-2001; 2001US-0873033.
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19-JUN-2001;
21-JUN-2001;
18-JUL-2001;
06-AUG-2001;
09-AUG-2001;
16-AUG-2001;
19-DEC-2001;
                                                                                                                                                                                                                                                          (GETH )
                                                                                                                                                                                                                                                          GENENTECH INC
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2001US-0887879.

2001US-09088779.

2001US-09088779.

2001US-0924419.

2001US-0927796.
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2001US-0028072
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Gerritsen Smith V, Baker KP, Stewart Beresini M, ME, Goddard TA, DeForge L, Desnoyers L, Filvaroff E, G A, Godowski PJ, Gurney AL, Sherwood S; Tumas D, Watanabe CK, Wood WI, Zhang Z; Gao Ξ

2003-331925/31. DB; ACA04256.

New secreted and transmembrane nucleic acids and polypeptides, designated as PRO, useful for treating inflammation, organ failure, atherosclerosis, cardiac injury, infertility, birth defects, premature aging, AIDS, or cancer

Claim 12; Fig 466; 659pp; English

The invention relates to an isolated nucleic acid comprising, or which is at least 80% identical to, or the full-length coding sequence of, any of the 275 nucleotide sequences, encoding the corresponding PRO polypeptide CC (one of 275 secreted or transmembrane proteins). The nucleic acid conduct American Type Culture Collection (ATCC) accession number in a list C given in the specification. Also included are vectors and host cells for producing PRO proteins, anti-PRO cells for producing PRO proteins, PRO fusion proteins, anti-PRO cells for proteins, methods for stimulating the release of conditional producing PRO proteins, methods for stimulating the release of conditional producing PRO proteins for stimulating the release or proteoglycans from cartilage, proliferation of chondrocyte cells, the release of a cytokine from protheration of T-lymphocyte cells, the release of a cytokine from protheral blood mononuclear cells (PBMC), or the cytokine from peripheral blood mononuclear cells (PBMC), or the full prother from peripheral blood mononuclear cells (PBMC), or the proliferation of adipocyte cells, a method for detecting the uptake cells are useful for treating of A-peptide to factor VIIA, or the presence of a tumour in a mammal and an oligonucleotide probe derived cells of the nucleotide sequences cited above. The nucleic acids and cell propertides are useful for treating inflammatory diseases, organ cells of the nucleotides are useful as hardwarene), cancer, or diabetic complications. The nucleic acids are useful as hybridisation cancer or biosensors or bioreactors. Both are useful in tissue typing.

The present sequence represents a PRO protein of the invention.

Sequence ₹

Query Match Best Local S Matches 8

1.5%;

DB 71, 24;

Length 437; Indels

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Gaps

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맑 δ 466 VILLALLG 473 4 VLLLALLG 11 Similarity 100 8; Conservative Score 8; DB 2; Pred. No. 71; 0; Mismatches

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RESULT 31
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17-SEP-1998
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    2000WO-US00219
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98WO-US19824

98WO-US19093

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98WO-US2101

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18-PEB-2000
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18-FEB-2000;
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2000WO-US23522.
2000WO-US33952.
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2001WO-US496666.
2001WO-US4969.
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2001US-0806889.
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(GETH ) GENENTECH INC.

Baker Kr, Gerritsen M Beresini M, Defor ME, Goddard A, Go Stewart TA, Tumas Deforge L, Desnoyers L, Filvar A, Godowski PJ, Gurney AL, She Filvaroff E, the Sherwood S; Zhang Z GAO Ξ

WPI; 2003-148238/14. N-PSDB; ABX89373.

Novel isolated PRO polypeptides e.g., PRO826, PRO1068, PRO1184, PRO1346 and PRO1375, which stimulate proliferation of stimulated T-lymphocytes are therapeutically useful for enhancing immune response and in cancer treatments

Claim 12; Fig 466; 659pp; English.

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RESULT 32
ABU60811
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The invention describes an isolated human PRO polypeptide. The PRO CC polypeptides are useful in detecting PRO polypeptides in a sample, in CC linking a bioactive molecule to a cell expressing a PRO polypeptide, and CC in modulating at least one biological activity of a cell expressing a PRO polypeptide. PRO1312 stimulates hypertrophy of neonatal heart and is thus CC useful for treating cardiac insufficiency disorders. PRO1154 and PRO1186 CC stimulate adrenal cortical capillary endothelial growth, and PRO1366, PRO1360 and PRO1367 induce c-fos in endothelial cells, and are thus CC useful for treating conditions or disorders where angiogenesis would be beneficial, e.g. wound healing and antagonist of this polypeptide are CC useful for treating cancerous tumours. PRO815 inhibitis vascular CC endothelial growth factor (VEGF) stimulated proliferation of endothelial cells and is thus useful for inhibiting endothelial cell growth in CC mammals which would be beneficial in inhibiting tumour growth. PRO826, PRO1368, PRO1364, PRO1365, PRO1375 stimulate proliferation of communate response. PRO828, PRO826, PRO1088 or PRO1312 enhance survival of continuar response. PRO828, PRO826, PRO1088 or PRO8132 enhance survival of continuar response. PRO828, PRO826, PRO1088 or PRO1132 enhances survival of continuar response. PRO828, PRO826, PRO1088 or PRO1132 enhances survival of continuar response. PRO828, PRO826, PRO1088 or PRO1132 enhances survival of continuar response. PRO828, PRO826, PRO1088 or PRO1132 enhances survival of continuar response. PRO828, PRO826, PRO1088 or PRO1132 enhances survival of continuar response. PRO828, PRO826, PRO1088 or PRO1132 enhances survival of continuar response.
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Best Local S
Matches 8
02-JUN-199;
01-DEC-1999;
02-DEC-1999;
11-FEB-2000;
22-FEB-2000;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           inflammatory disease; bioreactor; therapeutic; gene therapy; tumour; inflammatory disease; immune-related disease; inflammatory bowel dise IBD; systemic lupus erythematosus; rheumatoid arthritis; thyroiditis; diabetes mellitus; glomerulonephritis; multiple sclerosis; cirrhosis; psoriasis; graft rejection; antiinflammatory; immunosunevanimenteritis; neuroprofective.
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                                                                                                                                                                                                                           27-DEC-2001;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   neuroprotective;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human secreted/transmembrane protein, #5.
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8; Conser
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8; Pred. No. 71;
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RESULT 33 ABG73312

ABG73312;

ABG73312 standard; Protein; 437

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Best Local Similarity 100.
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30-MAR-2000;
30-MAY-2000;
02-JUN-2000;
                                                                                                                                               above-mentioned diseases. The polynucleotide is useful in molecular biology, including uses as hybridisation probes, in chromosome and gene mapping, in generating antisense RNA and DNA, and in gene therapy. The polynucleotide may also be used in preparing PRO polypeptides by recombinant techniques, and in generating either transgenic animals or knock-out animals which, in turn, are useful in the development and screening of therapeutically useful reagents. The sequences presented in ABU60807-ABU60815 are the human PRO polynucleotides of the invention.
                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention discloses isolated PRO secreted/transmembrane polypeptides comprising a sequence without signal peptide and the nucleic acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New isolated PRO polypeptide, e.g. PRO1800 or PRO539, useful for diagnosing, preventing and treating tumors and inflammatory or immune-related diseases, e.g. systemic lupus erythematosus, thyroiditis, diabetes or psoriasis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 12; Fig 10; 119pp; English
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Wood WI;
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Pan J, Roy MA,
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2001US-0866034.
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Tumas F
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30-APR-2003

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16-DEC-1998
12-JAN-1999
12-JAN-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human; secreted and transmembrane polypeptide; PRO polypeptide; inflammatory disease; immune-related disease; diabetes mellitus; rheumatoid arthritis; glomerulonephritis; multiple sclerosis; immune-mediated skin disease; contact dermatitis; graft rejection; transplantation associated disease; graft-versus-host disease; tumour diagnosis; tumour cell; antiinflammatory; immunosuppressive; cytostatic; antianaemic; antirheumatic; antiarthritic; antithyroid; antidiabetic; nephrotropic; antipsoriatic; dermatological; haemostatic; hepatotropic; virucide; neuroprotective; PRO1863.
         The present invention relates to the isolation of novel human secreted and transmembrane polypeptides designated PRO polypeptides (PRO1800, PRO53), PRO982, PRO1434, PRO1863, PRO1917, PRO1868, PRO3434 and PRO1927), and the polynucleotide sequences encoding them. The PRO polypeptides and polynucleotide sequences of the invention are useful in diagnosing or treating inflammatory diseases or immune-related diseases (e.g. inflammatory bowel disease, systemic lupus
                                                                                                                    Claim 12; Fig 10; 119pp; English.
                                                                                                                                                           New PRO polypeptides and nucleic acid molecules, useful in diagnosing or treating inflammatory diseases or immune-related diseases, e.g. inflammatory bowel disease, systemic lupus erythematosus or rheumatoid
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N-PSDB; ABX11171.
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99US-115565P.
  rheumatoid arthritis,
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 Sjogren's syndrome,
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A, Tumas D,
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Watanabe CK;
  autoimmune
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RESULT 34
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30-NOV-1999;
01-DEC-1999;
01-DEC-1999;
                                                                                                                       01-DEC-1998;
05-JAN-1999;
08-MAR-1999;
02-JUN-1999;
                                                                                                                                                                                     16-SEP-1998;
17-SEP-1998;
07-OCT-1998;
                                                                                                                                                                                                                                                                                                                                                                                           cardiac insufficiency disorder; cancer; tumour; tumour; response; adrenal cortical capillary endothelial growth; c-fos induction; vascular endothelial growth factor inhibition; VEGF inhibition; endothelial cell growth inhibitor; T-lymphocytes stimulation; retinal neurons cell survival; rod photoreceptor cell survival; retinal disorder; retinitis pigmentosum; kidney disorder; mammalian kidney mesangial cell proliferation; Berger disease; dermatitis; herpetiformis; Crohn's disease; chondrocyte proliferation; chondrocyte redifferentiation; sports injury; arthritis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; PRO; hypertrophy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Novel human secreted or transmembrane protein PRO1181.
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                                                                                                                                                                                                                                       05-NOV-1997
                                                                                                                                                                                                                                                                       14-NOV-2001;
                                                                                                                                                                                                                                                                                                      19-SEP-2002
                                                                                                                                                                                                                                                                                                                                    US2002132252-A1
                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
           16-DEC-1999
20-DEC-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local
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8; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                       2001US-0990442.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                           99WO-US21547.
99WO-US28313.
99WO-US28301.
                            99WO-US28634.
99WO-US30095.
                                                                                                          99WO-US12252.
99WO-US21090.
                                                                                                                                          99WO-US00106.
99WO-US05028.
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98WO-US19437.
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                                                                                                                                                                                          98WO-US21141.
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100.0%; Pro
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              of neonatal heart; angiogenesis; wound healing;
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dermatitis
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08-NOV-2000;
01-DEC-2000;
28-FEB-2001;
01-JUN-2001;
29-JUN-2001;
29-JUN-2001;
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17-OCT-
12-NOV-
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15-MAR-2000;
20-MAR-2000;
30-MAR-2000;
15-MAY-2000;
17-MAY-2000;
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11-FEB-2000;
18-FEB-2000;
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970S-065770P

980S-075945P

980S-078910P

980S-08100P

980S-08100P

980S-081025P

980S-088025P

980S-088025P

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980S-089539P
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3-088655P.
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S-088824P.
S-088826P.
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S-088167P.
S-088202P.
S-088212P.
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S-088025P.
S-088026P.
S-088028P.
S-088029P.
S-088033P.
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3-078910P.
3-083322P.
3-087160P.
3-087607P.
3-087609P.
3-087759P.
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RESULT 35 ABU59300

ABU59300 standard; Protein; 437

Human secreted/transmembrane protein, #143.

22-APR-2003 ABU59300;

(first entry)

밁 S

466 VLLLALLG 473

Query Match Best Local S Matches

8; Conserv

Conservative

0,

Mismatches DB 71; 24;

0;

0

Gaps

0

Length 437; Indels

O.F

1.5%; Score 8; 100.0%; Pred. No.

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CC PRO943, PRO828, PRO826, PRO1086 or PRO535. PRO826, PRO9137, PRO819, PRO819, PRO8196, PRO1186, CC PRO943, PRO826, PRO9186, PRO8196, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8197, PRO8
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18-JUN-1998;
18-JUN-1998;
28-AUG-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       The invention describes an isolated human PRO polypeptide. The PRO polypeptides are useful in detecting PRO polypeptides in a sample, in linking a bioactive molecule to a cell expressing a PRO polypeptide, and in modulating at least one biological activity of a cell expressing a PRO polypeptide. PRO1312 stimulates hypertrophy of neonatal heart and is thus useful for treating cardiac insufficiency disorders. PRO1154 and PRO1186 stimulate adrenal cortical capillary endothelial growth, and PRO536, process macros are process.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Novel isolated PRO polypeptides e.g., PRO826, PRO1068, PRO1184, PRO1346 and PRO1375, which stimulate proliferation of stimulated T-lymphocytes are therapeutically useful for enhancing immune response and in cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2003-247083/24.
N-PSDB; ABX80352.
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Ferrara N, Pong S, Gerber H, Gerritsen ME, Goddard A,
Grimaldi JC, Gurney AL, Kljavin IJ, Napier MA, Pan J,
Roy MA, Stewart TA, Tumas D, Watanabe CK, Williams PM,
Sequence
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98US-089907P.
98US-089908P.
2001US-0941992.
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Godowski |
Paoni NF;
Wood WI;
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98WO-US19437 98WO-US21141 98WO-US21108 99WO-US05028 99WO-US05028 99WO-US21090 99WO-US21090 99WO-US21091 99WO-US21091 99WO-US21091 99WO-US230311 99WO-US230312 99WO-US230316 2000WO-US063141 2000WO-US063141 2000WO-US06319 2000WO-US06319 2000WO-US06319 2000WO-US06319 2000WO-US06319 2000WO-US06319 2000WO-US14041 2000WO-US0531705 2000WO-US15264 2000WO-US15264 2000WO-US15264 2000WO-US15264 2000WO-US152678 2000WO-US152678 2000WO-US152678 2000WO-US152678 2000WO-US152650 2001WO-US152650 2001WO-US16520 2001WO-US16520 2001WO-US16520 97US-065311P 97US-065311P 98US-087609P 98US-087609P 98US-087609P 98US-087827P 98US-088021P 98US-088021P	secreted; transmembrane; pharmaceutical; biosensor; bioreactor; tumour; therapeutic; ritumour-associated antigenic target; TAT; ADEPT; rendent enzyme mediated prodrug therapy; cytostatic.  20105-0997428.
	04-JUN-19 04-JUN-19 04-JUN-19 04-JUN-19 04-JUN-19 04-JUN-19 05-JUN-19 05-JUN-19 05-JUN-19 05-JUN-19 10-JUN-19 10-JUN-19
988 98US -088824P 98US -088824P 98US -088826P 98US -088861P 98US -088944P 98US -089532P 98US -0995252P 98US -0990431P 98US -0990431P 98US -0990431P 98US -0990431P 98US -0990432P 98US -0990432P 98US -0990432P 98US -0990432P 98US -0990432P 98US -0990432P 98US -0990432P 98US -0990432P 98US -0990632P 98US -0990632P 98US -0990632P 98US -0990632P 98US -0991632P 98US -091632P 98US -091632P	98

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RESULT 36
ABU59449
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Best Local S
Matches 8
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18-AUG-1998

18-AUG-1998

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26-AUG-1998

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04-AUG-1998
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18-AUG-1998;
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17-AUG-1998;
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17-AUG-1998;
17-AUG-1998;
17-AUG-1998;
Human; PRO; hypertrophy of neonatal heart; angiogenesis; wound learting discrete; cancer; tumour; immune response adrenal cortical capillary endothelial growth; c-fox induction; vascular endothelial growth factor inhibition; VEGF inhibition; endothelial growth inhibitor; T-lymphocytes stimulation; retinal neurons cell survival; rod photoreceptor cell survival;
                                                                                                                                     Novel
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4 VLLLALLG 11
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8; Conserv
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98US-095305P

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98US-096012P

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71;
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30-MAY-2000
02-JUN-2000
11-AUG-2000
23-AUG-2000
24-AUG-2000
24-AUG-2000
01-DEC-2000
01-DEC-2000
01-DEC-2001
10-JUN-2001
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                                                                                                 Human; PRO; secreted; transmembrane; signal peptide; pharmaceutical; diagnostic; therapeutic; gene therapy.
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                           14-NOV-2001; 2001US-0992598
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4 VLLLALIG 11
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                                                                                                                                                                                                                                                                                                                             The invention discloses isolated PRO secreted/transmembrane polypeptides CC comprising a sequence without signal peptide and the nucleic acid cencoding them. The polypeptides can be used to raise antibodies that cc encoding them. The polypeptides can be used to raise antibodies that cc encoding them. The polypeptides can be used to raise antibodies that cc molecule to a cell expressing a PRO protein and for modulating at least cc molecule to a cell expressing a PRO protein and for modulating at least complymentiates are also useful in gene therapy, in chromosome cc identification, as chromosome markers, or in generating probes. The PRO polypeptides are useful as molecular markers for protein cc electrophoresis, and the isolated nucleic acids may be used for cecombinantly expressing those markers. The PRO polypeptides and nucleic acids may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid may also be used in tissue typing. Anti-PRO antibodies are useful coid.

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Ferrara N, Fong S, Gerber H, Gerritsen ME, Goddard
Grimaldi JC, Gurney AL, Kljavin IJ, Napier MA, Pan
Roy MA, Stewart TA, Tumas D, Watanabe CK, Williams
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2000WO-US00219. 2000WO-US00376. 2000WO-US03565. 2000WO-US04341. 2000WO-US04414. 2000WO-US04914.

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2000WG-US00219. 2000WG-US03565. 2000WG-US04341. 2000WG-US04314. 2000WG-US04314. 2000WG-US056841. 2000WG-US056841. 2000WG-US056841. 2000WG-US056842. 2000WG-US013358. 2000WG-US13358. 2000WG-US134941. 2000WG-US134941. 2000WG-US13964. 2000WG-US22031. 2000WG-US22031. 2000WG-US22031. 2000WG-US22031. 2000WG-US23522. 2000WG-US23528. 2000WG-US23528. 2000WG-US23528. 2000WG-US23528. 2001WG-US23528. 2001WG-US23528. 2001WG-US23528. 2001WG-US23528. 2001WG-US23528. 2001WG-US23528. 2001WG-US23528. 2001WG-US23528. 2001WG-US21735. 97US-065186P. 97US-065311P. 97US-065311P. 98US-075944P. 98US-078910P. 98US-083122P. 98US-0837607P. 98US-0837607P. 98US-0877607P. 98US-0877607P. 98US-0877607P. 98US-087752P.	lypeptide #107.  yyostatic; tumour; cancer; breast; lung; stomach, idg; cat; sheep; pig; goat; rabbit; ADEPT; endent enzyme mediated prodrug therapy.  -Al.  2001US-0997666.  97WO-US20069. 98WO-US19330. 98WO-US19437. 98WO-US21141. 98WO-US21141. 99WO-US21168. 99WO-US21547. 99WO-US21690. 99WO-US21690. 99WO-US21690. 99WO-US21690. 99WO-US28301. 99WO-US28301. 99WO-US28301. 99WO-US283091.
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                                      Human; PRO; secreted; transmembrane; signal peptide; pharmaceutical; diagnostic; biosensor; bioreactor; tumour; therapeutic; colon cancer; lung cancer; breast cancer; cancer; gene therapy.
        Homo sapiens
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                                                                                                                                                                                                                                                   The invention discloses isolated PRO secreted/transmembrane polypeptides comprising a sequence without signal peptide and the nucleic acid comprising them. The polypeptides can be used to raise antibodies that specifically bind to the PRO polypeptide, for linking a bioactive molecule to a cell expressing a PRO protein and for modulating at least one biological activity of a cell. The PRO polypeptides or polynucleotides are also useful as pharmaceuticals, diagnostics, blosensors or bioreactors, for detecting or treating e.g. tumours in mammals, e.g. humans, dogs, cats, cattle, horses, sheep, pigs, goats or rabbits as targets for therapeutic intervention in certain cancers (e.g. colon, lung or breast cancers) and diagnostic determination of the presence of these cancers. The PRO polypeptides are also useful as molecular weight markers or for chromosome identification. The PRO genes cance useful as hybridisation probes or for screening libraries of human clux, genomic DNA or mRNA. The PRO genes may also be used in gene therapy, particularly for replacing a defective gene. The sequences or presented in ABU58900-ABU589046 are the PRO polypeptides of the invention.
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Grimaldi
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Ferrara N,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New secreted and transmembrane PRO polypeptides (e.g. PRO183, PRO184, PRO361 or PRO846) useful as targets for therapeutic intervention in cancers (e.g. lung or breast cancers), or for diagnosing these cancers
                                                                                                                                                                                                          Sequence
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Gerber H. Gerritsen ME. Goddard A.
AL. Kljavin IJ. Napier MA. Pan J.
Tumas D. Watanabe CK. Williams PM.
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genetic disorder; antibacterial; immunosuppressive.
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      The present invention relates to the isolation of novel human PRO polypeptides, and the polynucleotide sequences encoding them. The PRO polypeptides are secreted and transmerane proteins. The PRO polypeptides are useful for detecting other PRO polypeptides, for linking bioactive molecules to cells expressing PRO polypeptides, for modulating biological activities of cells expressing PRO polypeptides, polypeptides, and for for identifying agonists or antagonists. The polynucleotide sequences encoding PRO polypeptides are useful as hybridisation probes, in chromosome and gene mapping, in the generation of antisense RNA and DNA, in the preparation of PRO polypeptides, for generation probes for mapping the gene which encodes the PRO polypeptide, and for the genetic analysis of individuals with genetic alterney for the genetic analysis of individuals with genetic
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N-PSDB; ABX64176.
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N, Fong S, Gerber H, Gerritsen ME, Goddard A,
i JC, Gurney AL, Kljavin IJ, Napier MA, Pan J,
Stewart TA, Tumas D, Watanabe CK, Williams PM,
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                                                                                                  Sequence
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US-09-252-991A-21858

US-09-205-258-1046

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US-09-252-991A-31557

US-08-756-378-13

US-09-265-873-13

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US-08-467-344A-52

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US-08-252-991A-30129

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US-09-073-541A-20

US-09-073-541A-21214

US-09-252-991A-21214

US-09-252-991A-21216

US-09-252-991A-30725

US-09-252-991A-19064

US-09-252-991A-25715

US-09-252-991A-25715

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US-09-08-989-385-4

US-09-252-991A-25715

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APPLICANT: Rachel Rhondinelli
APPLICANT: Fox Chase Cancer Center
APPLICANT: Fox Chase Cancer Center
APPLICANT: Fox Chase Cancer Center
APPLICANT: Fox Chase Cancer Center
TITLE OF INVENTION: Prognostic Compositions for Prostate Cancer and Methods of Use
TITLE OF INVENTION: thereof
FILE REPERENCE: FCCC 96-13
CURRENT APPLICATION NUMBER: US/09/485,549
CURRENT FILING DATE: 2000-11-09
PRIOR APPLICATION NUMBER: PCT/US98/16768
PRIOR APPLICATION NUMBER: FCT/US98/16768
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PRIOR FILING DATE: 1997-08-13
NUMBER OF SEQ ID NOS: 10
SOFTWARE: FastSEQ for Windows Version 3.0
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Patent No. 6361948
GENERAL INFORMATION:
APPLICANT: James Tr:
APPLICANT: Rachel RI
APPLICANT: Fox Chase
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Rachel Rhondinelli
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TOPOLOGY: lir; MOLECULE TYPE: FRAGMENT TYPE: US-09-073-569-2
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; CURRENT APPLICATION NUMBER: US/09/485,549
; CURRENT FILING DATE: 2000-11-09
; PRIOR APPLICATION NUMBER: PCT/US98/16768
; PRIOR FILING DATE: 1998-08-13
; PRIOR APPLICATION NUMBER: 60/055,285
; PRIOR FILING DATE: 1997-08-13
; NUMBER OF SEQ ID NOS: 10
; SOFTWARE: FastSEQ for Windows Version 3.0
; SEQ ID NO 2
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Best Local Similarity
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              Query Match
Best Local Similarity
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APPLICANT: Sheppard, Paul O.
APPLICANT: Grossmann, Angelika
TITLE OF INVENTION: NOVEL TUMOR ANTIGENS
NUMBER OF SEQUENCES: 15
CORRESPONDENCE ADDRESS:
                                                                                                                                               INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 437 amino acids
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH: 276
TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                     FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: Sawislak, Deborah;
REGISTRATION NUMBER: 37,
REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                           COMPUTER: IBM Compatible
OPERATING SYSTEM: DOS
SOFTWARE: Fast-SEQ for Windows Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/073,569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ZIP: 98102
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
                                                                                                                                                                                                                                                       TELECOMMUNICATION INFORMATION: TELEPHONE: 206-442-6672
                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
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1201 Eastlake Avenue East
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1.5%; Score 8; DB ilarity 100.0%; Pred. No. 23 Conservative 0; Mismatches
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100.0%; Pred. No.
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TITLE OF INVENTION: Acids Encoding the St
FILE REFERENCE: P2730P1C13
CURRENT APPLICATION NUMBER: US/09/996,243
CURRENT FILING DATE: 2001-11-14
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FILING DATE: 1997-06-16
APPLICATION NUMBER: 60/062250
FILING DATE: 1997-10-17
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APPLICATION NUMBER: 60
FILING DATE: 1997-11-1
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APPLICATION NUMBER: 60/083322
FILING DATE: 1998-04-28
APPLICATION NUMBER: 60/084600
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FILING DATE: 1998-06-02
APPLICATION NUMBER: 60/087827
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APPLICATION NUMBER:
FILING DATE: 1998-05
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APPLICATION NUMBER: 60/075945
FILING DATE: 1998-02-25
APPLICATION NUMBER: 60/078910
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APPLICATION NUMBER: 60/066770
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                                                         FILING DATE: 1998-06-03
APPLICATION NUMBER: 60/088021
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Baker, Kevin P.
Botstein, David
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Williams, P. Mickey
Wood, William I.
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Gurney, Austin L.
Kljavin, Ivar J.
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Gerritsen, Mary E.
Goddard, Audrey
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Eaton, Dan L.
Ferrara, Napoleone
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art, Timothy A.
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APPLICATION NUMBER: 60/089952
FILING DATE: 1998-06-19
APPLICATION NUMBER: 60/090246
FILING DATE: 1998-06-22
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PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR FILING DATE: 1998-02-18

PRIOR FILING DATE: US 60/094,190

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 18990

LENGTH: 689

TYPE: DPT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;Patent No. 5486473
;Patent No. 5486473
;APPLICANT: FUKITA, HIROYUKI;YOSHIDA, 1MAU,...
;MANABE, SADAO;FUKAI, KONOSUKE
;TITLE OF INVENTION: A DNA CODING FOR A FLAVIVIRUS ANTIGEN
;TITLE OF SEQUENCES: 16
;TITLE OF SEQUENCES: 16
                                                                    US-08-332-562A-88
; Sequence 88, App.;
; Patent No. 59855;
; GENERAL INFORMA:
; APPLICANT: M.
; APPLICANT: H.
; APPLICANT: H.
; APPLICANT: H.
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                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: PRT; ORGANISM: Pseudomonas US-09-252-991A-18990
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US-09-252-991A-18990
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Patent No. 6551795
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: US/
FILING DATE: 09-FEB-1994
PRIOR APPLICATION DATA:
APPLICANT: BONADONNA, LIBBA APPLICANT: HULETT, Mark D. TITLE OF INVENTION: FC RECENUMBER OF SEQUENCES: 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: 809,255
FILING DATE: 18-DEC-1991
APPLICATION NUMBER: 279,685
FILING DATE: 05-DEC-1988
APPLICATION NUMBER: 932,419
FILING DATE: 19-NOV-1986
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                                                                                                                                        INFORMATION:
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8; Conserva
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                                                                                                                                                                                                                                                                                                                        1.5%; So ilarity 100.0%; E Conservative 0;
                                                                                      HIBBS, Margaret L.
                                                                                                       MCKENZIE, Ian F.C. HOGARTH, Mark P.
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                                                                    Bernadette M.
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                      FC RECEPTOR FOR IMMUNOGLOBULIN
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%; Pred. No. 34;
0; Mismatches
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26;
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Best Local Similarity 10...
Thes 7; Conservative
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SEQUENCE CHARACTERISTICS:
LENGTH: 87 amino acids
TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
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CURRENT FILING DATE: 1998-12-04
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                                                                                                                                                                                                                                                                                                                                                                                                                  PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                TLE OF INVENTION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: 54
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202)672-5300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/896,457
FILING DATE: 27-MAY-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/0
FILING DATE: 31-OCT-1994
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ADDRESSEE: Foley & L
STREET: 3000 K Stree
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEPHONE: (202)672-5399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COUNTRY: USA
ZIP: 20007-5109
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                                                                                ER APPLICATION NUMBER: 60/049,375

ER FILLING DATE: 1997-06-06

ER APPLICATION NUMBER: 60/048,881

ER APPLICATION NUMBER: 60/048,880

ER APPLICATION NUMBER: 60/048,880

ER APPLICATION NUMBER: 60/048,896

ER APPLICATION NUMBER: 60/048,896

ER APPLICATION NUMBER: 60/048,896

ER APPLICATION NUMBER: 60/049,020

ER FILLING DATE: 1997-06-06

ER APPLICATION NUMBER: 60/049,020
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               FILING DATE: 1997-06-06
APPLICATION NUMBER: 60/048,876
FILING DATE: 1997-06-06
APPLICATION NUMBER: 60/048,895
FILING DATE: 1997-06-06
                                                                                                                                                                                                                                                                                                                        APPLICATION NUMBER: PCT/US98/11422
                                                                                                                                                                                                                                                                     FILING DATE: 1997-06-06
                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: 60/048,885
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                                                                                                                                                                                                                                                                                                                                                                                            207 Human Secreted Proteins
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100.0%; Pred. No. 49;
ative 0; Mismatches
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60/048,884
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; ORGANISM: Homo sapiens US-09-205-258-1046
                                             EARLIER APPLICATION NUMBER: 60/094,657
EARLIER FILING DATE: 1998-07-30
NUMBER OF SEQ ID NOS: 1227
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 1046
LENGTH: 100
                                                                                                                                                         EARLIER FILING DATE: 1997-12-18
EARLIER APPLICATION NUMBER: 60/092,921
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                                TYPE: PRT
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                                                                                                                                             FILING DATE:
                                                                                                                                                                                           APPLICATION NUMBER: 60/070,923
                                                                                                                                                                                                                                                      APPLICATION NUMBER: 60/048,877
                                                                                                                                                                                                                                                                         APPLICATION NUMBER: 60/048,963
FILING DATE: 1997-06-06
                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/048,898 FILING DATE: 1997-06-06
                                                                                                                                                                                                                                                                                                                                                                                          APPLICATION NUMBER: 60/048,897
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APPLICATION I
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Query Match
Best Local Similarity 100.0%; P
Matches 7; Conservative 0;

1.3%; Score 7; DB . 100.0%; Pred. No. 56 ive 0; Mismatches

DB 4;

Length 100; Indels

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Best Local Similarity
"---hes 7; Conserve
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                              5
                                                                                                                                 FEATURE:
, NAME/KEY: UNSURE
, LOCATION: (145),(146)
, OTHER INFORMATION: Identity of amino acid at the above locations are unknown.
US-09-252-991A-21858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-904-615-163
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SEQ ID NO 163
                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                       NUMBER OF SEQ ID NOS:
SEQ ID NO 21858
LENGTH: 146
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Patent No.
                                                                        Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION NUMBER: US/09/904,615
CURRENT FILING DATE: 2001-07-16
PRIOR APPLICATION NUMBER: 09/511,554
PRIOR FILING DATE: 2000-02-23
PRIOR APPLICATION NUMBER: 60/097,917
PRIOR FILING DATE: 1998-08-25
PRIOR FILING DATE: 1998-08-25
                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE: 107196.136
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: Rosen et al. TITLE OF INVENTION: 49 Human Secreted Proteins FILE REFERENCE: PZ032P1
                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AMD AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE: 107196.136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRIOR FILING DATE: 1998-08-31
NUMBER OF SEQ ID NOS: 170
                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR FILING DATE: 1998-07-27
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                                                                                                                                                                                                                                     ORGANISM: Pseudomonas aeruginosa
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                                  468 LLALLGG 474
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89 LLALLGG 95
                                                                    Similarity 7; Conserv
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1998-02-18
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100.0%; Pred. No. 74;
                                                                      $; Score 7; DB 4
$; Pred. No. 78;
0; Mismatches
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No. 78;
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RESULT 12
US-08-756-387B-13
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US-08-756-387B-13
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Best Local Similarity
Matches 7; Conserva
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Frank, Glenn R.
APPLICANT: Porter, James P
APPLICANT: Porter, James P
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CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRIOR APPLICATION NUMBER: US 60/094,190 PRIOR FILING DATE: 1998-07-27
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                                                                                                             TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                        COMPUTER: IBM PC Compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/756,387B
FILING DATE: No. 5945294ember 26, 1996
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ENGTH: 147
                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: DI-1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
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APPLICANT: Wassom, Donald L.
TITLE OF INVENTION: Method to Detect IgE
               MOLECULE TYPE:
                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: Carol Talkington Verser, Ph.D. ADDRESSEE: Heska Corporation STREET: 1825 Sharp Point Drive CITY: Fort Collins
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                                   TOPOLOGY:
                                                                        LENGTH:
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                                                                      172 amino acids
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             protein
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1998-02-18
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NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
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RESULT 14
US-09-252-991A-26925
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US-09-285-873-13
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                                            Patent No. 6551795
GENERAL INFORMATION:
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Best Local (
                                                                 Sequence 26925, Application US/09252991A Patent No. 6551795
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Best Local
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APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLBIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                    APPLICANT:
                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 970/484-9505
[NFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows,
CURRENT APPLICATION DATA:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICATION NUMBER: US/08/756,387
FILING DATE: NO. 6309832ember 26,
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION DATA:
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                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                               TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE: Carol Talkington Verser, Ph.D.
ADDRESSEE: Heska Corporation
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ilarity 100.0%;
Conservative (
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100.0%; Pred. N
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Pred. No.
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LENGTH: 176
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Matches 7; Conserv
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                                                                            TELEPHONE: 708-937-63
TELEFAX: 708-938-2623
INFORMATION FOR SEQ ID NO:
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PRIOR FILING DATE: 1998-C
NUMBER OF SEQ ID NOS: 331
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Pseudomonas aeruginosa
                                             SEQUENCE CHARACTERISTICS:
LENGTH: 177 amino acid
                                                                                                                                                                                                                              CLASSIFICATION: PRIOR APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                              TELECOMMUNICATION INFORMATION
                                                                                                                                                                        FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: POREMBSKI, PRISCILLA E.
                                                                                                                                                                                                                                                                                                                SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
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ADDRESSEE: ABBOTT LABORATORIES
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                 STRANDEDNESS:
                                                                                                                                           REGISTRATION NUMBER: 33,207
REFERENCE/DOCKET NUMBER: 5527.PC.01
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                             amino acid
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INVENTION: REAGENTS AND
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                                           177 amino acids
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ISA K. MUSHAHWAR
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GEORGE G. SCHLAUDER
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOHN N. SIMONS
TAMI J. PILOT-MATIAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ANTHONY SCOTT MUERHOFF
linear
                                                                                                               708-937-6365
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            single
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                                                                                                                    US-08-488-446-52
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                          Matches
                                                                                                                                                                                                                     NAME: POREMBSKI, PRISCILLA E.
REGISTRATION NUMBER: 33,207
REFERENCE/DOCKET NUMBER: 5527.1
TELECOMMUNICATION INFORMATION:
TELEPHONE: 708-937-6565
TELEPAX: 708-938-2623
INFORMATION FOR SEQ ID NO: 52:
                                                                      Query Match
Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: THOMAS P. LEARY
APPLICANT: ANTHONY SCOTT MUERHOFF
APPLICANT: JAMES C. ERKER
APPLICANT: SHERI L. BUIJK
APPLICANT: ISA K. MUSHAHWAR
TITLE OF INVENTION: NON-A, NON-B. NON-C,
TITLE OF INVENTION: REAGENTS AND METHODS
                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 60064-3500

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIA RE-BASE #1.0, Version #1.25

CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 716
CORRESPONDENCE ADDRESS:
ADDRESSEE: ABBOTT LABORATORIES
STREET: 100 ABBOTT PARK ROAD
CITY: ABBOTT PARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
                                                                                                                                 TOPOLOGY: 1: MOLECULE TYPE:
                                                                                                                                                                                          SEQUENCE CHARACTERISTICS
LENGTH: 177 amino acid
                                                                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                            STRANDEDNESS: single
                                                                                                                                                                            TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
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                             461 LAVGGVL 467
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                                                       Similarity 7; Conserv
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THOMAS P. LEARY
ANTHONY SCOTT MUERHOFF
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GEORGE G. SCHLAUDER
                                                        Conservative
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                                                                        1.3%;
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                                                                         Score 7;
Pred. No.
                                                        Mismatches
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                                                                         DB 4;
o. 93;
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TOPOLOGY: linear;

MOLECULE TYPE: protein;
SEQUENCE DESCRIPTION: SEQ ID NO: 52:
US-08-467-344A-52
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                                                                                                                                     RESULT 18
US-09-252-991A-30129
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Patent No. 6586568
GENERAL INFORMATION:
                                                 Sequence 30129, Application US/09252991A
Patent No. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
                                                                                                                                                                                                                                                                                             Query Match 1.3%; Score 7; DB Best Local Similarity 100.0%; Pred. No. 93 Matches 7; Conservative 0; Mismatches
                TITLE OF INVENTION:
FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEFAX: 708-938-2623
INFORMATION FOR SEQ ID NO: 52:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Ve
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/467,344A
FILING DATE: 07-Jun-1995
CLASSIFICATION: <Unknown>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRIOR APPLICATION DATA:

APPLICATION NUMBER: 08/424,550
FILING DATE: «Unknown»
ATTORNEY/AGENT INFORMATION:
NAME: POREMBSKI, PRISCILLA E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT:
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                                                                                                                                                                                                                    30 LAVGGVL 36
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REGISTRATION NUMBER: 33,207 REFERENCE/DOCKET NUMBER: 55
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            Marc J. Rubenfield et al.
VENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
VENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENGTH: 177 amino acids
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SHERI L. BUIJK
ISA K. MUSHAHWAR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SURESH M. DESAI
THOMAS P. LEARY
ANTHONY SCOTT MUERHOFF
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                                                                                                                                                                                                                                                                                                                        DB 4;
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Best Local Similarity
Thes 7; Conserva
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US-08-765-536-1
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Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQ ID NO 30129
LENGTH: 191
TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Applic
Patent No. 5962634
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR FILING DATE: 1998-02-18
PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
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CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:
                                                                                                                                           TELEFAX: 215-568-3439
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Wordperfect
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/70
FILING DATE: April 30, 1997
                                                                                                                                                                                      NAME: DELUCA, MAXK
REGISTRATION NUMBER: 33,229
REFERENCE/DOCKET NUMBER: TJ
TELECOMMUNICATION INFORMATION:
TELEPHONE: 215-568-3100
                                                                                  MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/271,943
FILING DATE: 08-JUL-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:
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                                                                                              TYPE: amir
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET: One Liberty CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZIP: 19103
                                                                                                                                                                                                                                                                                         CLASSIFICATION: 530
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                                                                                                                            LENGTH:
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                                                                                              : 193 amino acids
amino acid
GY: linear
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 1.3%; Score 7; DB 2; llarity 100.0%; Pred. No. 1e+02; Conservative 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Korngold,
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                                                                                 protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1, Andrew
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.3%; Score 7; I
100.0%; Pred. No.
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                                 Length 193;
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   Gaps
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                                                                                                                        RESULT 21
US-08-756-387B-11
                                                                                            Sequence 11, Application US/08756387B Patent No. 5945294
                                                                            GENERAL INFORMATION:
                                                 APPLICANT:
                                                                APPLICANT:
                                 PPLICANT:
   ITLE OF INVENTION:
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PCT-US95-08401-1
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                                           Query Match
Best Local Similarity 100.0%;
Matches 7; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 1, Applicati
GENERAL INFORMATION:
APPLICANT: Jameso
                                                                                                                                                                                                            TELEFAX: 215-568-3439
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                           CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US
FILING DATE: 08-JUL-11
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Wordperfect
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
ODERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: Beavil, Andrew J.
TITLE OF INVENTION: IGE Antagonists
NUMBER OF SEQUENCES: 6
                                                                                                                                        MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                  TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
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                                                                                                                                                                                                                                                                                 REGISTRATION NUMBER: 33,229
REFERENCE/DOCKET NUMBER: TJI
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER: PCT/US95/08401 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STREET: One Liberty CITY: Philadelphia
                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                  TELEPHONE:
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                           379 GSLSEET 385
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63
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19103
                                                                                                                                                                  amino acid
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                                                                                                                                                                                    193 amino acids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sutton,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gould,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        McDonnell, James M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Korngold,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Jameson,
                                                                                                                                                          linear
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                                                                                                                                                                                                                                                                                                                                                             08-JUL-1994
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                                                                          Score 7;
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                                                            red. No. le
Mismatches
                                                                          DB 5;
DB 10;
                                                                                         Length 193;
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                                                          Gaps
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Porter, James P. Rushlow, Keith F

Frank, Glenn R.

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Rushlow, Keith E. Wassom, Donald L.

Method to Detect IgE

NUMBER OF SEQUENCES:

0

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Query Match
Best Local Similarity
Marches 7; Conserve
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US-08-788-954-2
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APPLICANT: RA, CH
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 197 amino acid
                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PC-DOS/MS-DOS
OPERATING-SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0,
CURRENT APPLICATION DATA:
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APPLICATION NUMBER: US/08/756,387B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                  APPLICATION NUMBER: US/08/788,954
FILING DATE: 24-JAN-1997
CLASSIFICATION: 424
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: SUGHRUE, MION, ZINN, MACPEAK, & SEAS
STREET: 2100 PENNSYLVANIA AVE., N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE:
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TELECOMMUNICATION INFORMATION:
TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ATTORNEY/AGENT INFORMATION: NAME: Verser, Carol Talk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS
                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
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COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
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ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
APPLICATION NUMBER:
                                APPLICATION NUMBER:
                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                          CITY: WASHINGTON
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                                                                                                                                                                                                                                                                                                                                                                LICANT: OKUMURA, KO
LE OF INVENTION: ANTIALLERGIC COMPOSITION
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NAITO, KOJI
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 US 08/023,912
                                  US/08/474,188
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                                                                                                                                      Version #1.25
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o. 1e+02;
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RESULT 23
US-09-285-873-11
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                                                              ; TOPOLOGY: linear ; MOLECULE TYPE: protein US-09-285-873-11
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Best Local Similarity 100.0%;
Matches 7; Conservative
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Matches
                            Query Match
                                                                                                                                                                                                                           CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION UNMBER: US/08/756,387
APPLICATION UNMBER: US/08/26mber 26, 1
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET NUMBER: DI-1
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INFORMATION FOR SEQ ID NO:
                                                                                                                           TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 197 amino acid
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LENGTH: 197 amino acids
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TELEPHONE: (202)293-7060
TELEFAX: (202)293-7860
                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER: IBM PC compatible OPERATING SYSTEM: Windows 95 SOFTWARE: WordPerfect for Windows, CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
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                                                                                                                                                                                                               TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE: Carol Talkington Verser,
ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
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Local Similarity
les 7; Conserv
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                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
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                                                                                                                                                                                            TELEPHONE:
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GY: linear
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                                                                                                                               197 amino acids
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Rushlow, Keith E.
Wassom, Donald L.
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                1,00.0%;
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1.3%; Score 7; DB 4; 100.0%; Pred. No. 1e+02; lve 0; Mismatches
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0; Mismatches
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DB 1;
                              Length 197;
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379 GSLSEET 385

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FILE REFERENCE: 107196.136

CURRENT APPLICATION NUMBER: US/09/252,991A

CURRENT FILING DATE: 199-02-18

PRIOR APPLICATION NUMBER: US 60/074,788

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR APPLICATION NUMBER: US 60/094,190

PRIOR FILING DATE: 1998-07-27

NUMBER OF SEQ ID NOS: 33142

SEQ ID NO 32491

LENGTH: 212
                                                                                       RESULT 26
US-08-107-6848-9
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US-09-252-991A-32491
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US-09-252-991A-18239
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                                                      Sequence 9, Application US/08107684B Patent No. 5552273
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Matches
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Best Local
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 GENERAL INFORMATION:
APPLICANT: CLEUZI
APPLICANT: AWADE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRIOR APPLICATION NUMBER: US 60/094,190
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: Marc J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
TITLE OF INVENTION: AERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FILE REFERENCE:
                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT ORGANISM: Pseudomonas aeruginosa
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                                                                                                                                                                                             370 SAAVSYT 376
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7; Conserve
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                                                                                                                                                                                                                                          1.3%; Score 7; DB llarity 100.0%; Pred. No. 1. Conservative 0; Mismatches
CLEUZIAT, Philippe L. AWADE, Abalo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
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UMBER: US 60/074,788
1998-02-18
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o. 1.1e+02;
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o. 1.1e+02;
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COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOPTWARE: PatentIn Release #1.0

PatentIn Release #1.0, Version #1.25

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US-08-107-684B-13
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OPERATING SYSTEM: PC-DOS/MS-DOS
SOPTWARE: PATENTIA Release #1.0, Version #1.25
SOPTWARE: PATENTIA Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/107,684B
FILING DATE: 17-AUG-1993
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Bertidge, William P.
REGISTRATION NUMBER: 30,024
REFERENCE/DOCKET NUMBER: WPB 28478
                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 13
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 215 amino acids
                                                                                                                                                                                                      APPLICANT: ROBERT-BAUDOUY, Jeann
APPLICANT: GAYRAL, Jean-Pierre
TITLE OF INVENTION: POLYMETRIST
TITLE OF INVENTION: POLYMECTERIST
TITLE OF INVENTION: POLYMECTERIST
TITLE OF INVENTION: POLYMETRIST
TITLE OF INVENTION: POLYMETRIBES
NUMBER OF SEQUENCES: 43
                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
COUNTRY: USA
ZIP: 22320
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                     APPLICANT: CLEAU...Abalo
APPLICANT: AWADE, Abalo
APPLICANT: ROBERT-BAUDOUY, Jeannine
APPLICANT: ROBERT-BAUDOUY, Jeannine
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APPLICANT: GAYRAL, Jean-Pierre
TITLE OF INVENTION: POLYPEPTIDES CONTAINING SEQUENCES
TITLE OF INVENTION: CHARACTERISTIC OF PYRROLIDONE CARBOXYLYL PEPTIDASES,
TITLE OF INVENTION: POLYNUCLEOTIDES CONTAINING A SEQUENCE CODING FOR SUCTITLE OF INVENTION: POLYPEPTIDES, AND THEIR USE, IN PARTICULAR FOR DIAGN
NUMBER OF SEQUENCES: '43
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ZIP: 22320
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
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                                                                                                                     STREET: P.O. Box
CITY: Alexandria
STATE: VA
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P.O. Box 19928
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CHARACTERISTIC OF PYRROLIDONE CARBOXYLYL PEPTIDASES,
POLYNUCLEOTIDES CONTAINING A SEQUENCE CODING FOR SUCH
POLYPEPTIDES, AND THEIR USE, IN PARTICULAR FOR DIAGNOSTIC
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Pred. No.
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Best Local
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INFORMATION FOR SEQ ID NO: 13
SEQUENCE CHARACTERISTICS:
LENGTH: 215 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: peptide
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CURRENT FILING DATE: 1998-12-04
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NAME: Berridge, William P
REGISTRATION NUMBER: 30,0
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FILING DATE: 17-AUG-1993
CLASSIFICATION: 435
                                                                                                                                                   ER FILING DATE: 1997-06-06
ER APPLICATION NUMBER: 60/048,884
ER FILING DATE: 1997-06-06
ER APPLICATION NUMBER: 60/048,894
ER FILING DATE: 1997-06-06
ER FILING DATE: 1997-06-06
ER FILING DATE: 1997-06-06
ER APPLICATION NUMBER: 60/048,971
ER APPLICATION NUMBER: 60/048,964
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                               APPLICATION NUMBER: 60/048,893 FILING DATE: 1997-06-06
                                                                APPLICATION NUMBER: 60/048,899 FILING DATE: 1997-06-06
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APPLICATION NUMBER: 60/048,895
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                                                                                                   APPLICATION NUMBER: 60/048,882 FILING DATE: 1997-06-06
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            APPLICATION NUMBER: 60/048,900
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Pred. No. 1.1e+02;
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RESULT 29
US-09-252-991A-23837
US-09-252-991A-23837, Application US/09252991A
; Sequence 23837, Application US/09252991A
; Patent No. 6551795
; GENERAL INFORMATION:
; APPLICANT: Marc J. Rubenfield et al.
; TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS
; TITLE OF INVENTION: ACRUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
                                                                                                                                                                                                                                                                                                                                                                                                                         ; TYPE: PRT ; ORGANISM: Homo sapiens US-09-205-258-1044
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LENGTH: 216
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NUMBER OF SEQ ID NOS: 1227
SOFTWARE: Patentin Ver. 2.0
FILE REFERENCE: 107196.130
CURRENT APPLICATION NUMBER: US/09/252,991A
TITING DATE: 1999-02-18
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EARLIER FILING DATE: 1998-07
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EARLIER
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APPLICATION NUMBER: 60/048,892
FILING DATE: 1997-06-06
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                                                                                                                                                                                                                                                                     96 LSASTSG 102
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100.0%; Pred. No. 1.1e+02
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Sequence 13, Apr-
No. 5770396
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LENGTH: 228
TYPE: PRT
                                                           Matches
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Best Local
                                                                                    Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRIOR APPLICATION NUMBER:
PRIOR FILING DATE: 1998-0
PRIOR APPLICATION NUMBER:
PRIOR FILING DATE: 1998-0
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                                                                                                                                                                                                                                                        TELEFAX: (703)683-4109
TELEX: 899149
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 232 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 40
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                 MOLECULE TYPE: protein ORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                             SOFTWARE: PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: Foley & Lardner
STREET: 1800 Diagonal Road, Suite 500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ITLE OF INVENTION: ITLE OF INVENTION:
                                                                                                                                                                                                                                                                            TELEPHONE: (703)683-4109
                                                                                                                               ORGANISM: homo sapien
STRAIN: FCRI alpha subunit
                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 19
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: US
FILING DATE: 19920416
                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CITY: Alexandria
                                                                         Local
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                           379 GSLSEET 385
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                                                         Similarity 7; Conserv
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7; Conservative 0;
 GSLSEET 49
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                                                       Conservative 0;
                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                       (703)836-9300
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1998-02-18
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1.3%; Score 7; [
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р. 1.2e+02;
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o. 1.2e+02;
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US-08-756-387B-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; MOLECULE TYPE: protein US-08-756-387B-6
                                                                                                                                                                                                                                                        Sequence 13, Application US/09103663D Patent No. 6171803 GENERAL INFORMATION:
                                                CURRENT APPLICATION NUMBER: US/09/103,663D CURRENT FILING DATE: 1998-06-23 EARLIER APPLICATION NUMBER: 07/869,933 EARLIER FILING DATE: 1992-04-16 NUMBER OF SEQ ID NOS: 35 SOFTWARE: Patentin Ver. 2.1 SEQ ID NO 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
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Best Local (
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Patent No. 5945294
                                                                                                                                                                     APPLICANT: Kinet et al.
TITLE OF INVENTION: Isolation, characterization,
TITLE OF INVENTION: subunit of the high affinity
TITLE OF INVENTION: immunoglobulin E.
FILE REFERENCE: 50490
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SEQUENCE CHARACTERISTICS:
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,499
REFERENCE DOCKET NUMBER: DI-1
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version
CURRENT APPLICATION DATA:
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NAME: Verser, Carol Talk
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Carol Talkington Verser, Ph.D. STREET: 1825 Sharp Point Drive CITY: Fort Collins
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nes 7; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ZIP: 80525
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Rushlow, Keith E.
Wassom, Donald L.
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ilarity 100.0%;
Conservative
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o. 1.2e+02;
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                                                                              US-09-364-230-10
                                                                                               RESULT 34
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Best Local Similarity
Matches 7; Conserv
                               GENERAL INFORMATION:
                                              Sequence 10, Appli
Patent No. 6348339
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Cahoon, Rebecca E. APPLICANT: Hitz, William D.
                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 970/484-9505
NFORMATION FOR SEQ ID NO: 6:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Porter, James P.
APPLICANT: Rushlow, Keith E.
APPLICANT: Wassom, Donald L.
TITLE OF INVENTION: Method to Detect IGE
NUMBER OF SEQUENCES: 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CORRESPONDENCE ADDRESS:
ADDRESSEE: Carol Talkington Verser,
ADDRESSEE: Heska Corporation
STREET: 1825 Sharp Point Drive
CITY: Fort Collins
STATE: Colorado
                                                                                                                                                                                                                                                                                                                                                                                                                                                FILING DATE: No. 6309832ember 26, ATTORNEY/AGENT INFORMATION: NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRIOR APPLICATION DATA:
APPLICATION NUMBER: 1
FILING DATE: No. 630
                                                                                                                                                                                                                                                                                      TOPOLOGY: linear MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                      SEQUENCE CHARACTERISTICS:
LENGTH: 232 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                      TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
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                                                                                                                                                                                                                                                                                                                       TYPE: amino acid
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                                                             Application US/09364230
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100.0%; Pred. No.
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o. 1.2e+02;
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Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Kinney, Anthony J.
APPLICANT: Rafalski, J. Antoni
TITLE OF INVENTION: Enzymes Involved in Degradation of Branched-Chain Amino /
FILE REFERENCE: BB-1178
CURRENT APPLICATION NUMBER: US/09/364,230
CURRENT FILING DATE: 1999-07-29
EARLIER APPLICATION NUMBER: 60/094,990
EARLIER FILING DATE: July 31, 1998
NUMBER OF SEQ ID NOS: 34
SOFTWARE: Microsoft Office 97
SEQ ID NO 10
LENGTH: 234
TYPE: PRT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No. 5770396
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                               APPLICATION NUMBER: US/07/869,933
FILING DATE: 19920416
CLASSIFICATION: 514
ATTORNEY/AGENT INFORMATION:
NAME: BENT, Stephen A.
REGISTRATION NUMBER: 29,768
REFERENCE/DOCKET NUMBER: 40399/154
                                                                                                                                    INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
LENGTH: 257 amino acids
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                                                                   COUNTRY: USA
ZIP: 22313-0299
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PAtentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                            TELEPHONE: (703)836-9300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE OF INVENTION:
TITLE OF INVENTION:
                                                                                                    MOLECULE TYPE: protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 1800 Diag
CITY: Alexandria
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VENTION: ISOLATION, CHARACTERIZATION, AND USE OF
VENTION: THE HUMAN B SUBUNIT OF THE HIGH AFFINITY RECEPTOR FOR
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                                    100.0%;
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                                  1.3%; Score 7; DB 1; Le: 100.0%; Pred. No. 1.3e+02;
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k; Pred. No. 1.2
0; Mismatches
                  0;
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379 GSLSEET 385

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83

GSLSEET

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GENERAL INFORMATION:

APPLICANT: Kinet et al.

APPLICANT: Kinet et al.

TITLE OF INVENTION: Isolation, characterization, and use of the human beta

TITLE OF INVENTION: subunit of the high affinity receptor for

TITLE OF INVENTION: immunoglobulin E.

TITLE OF INVENTION: immunoglobulin E.

TITLE OF INVENTION NUMBER: US/09/103,663D

CURRENT APPLICATION NUMBER: US/09/103,663D

CURRENT FILING DATE: 1998-06-23

EARLIER APPLICATION NUMBER: 07/869,933

EARLIER FILING DATE: 1992-04-16

NUMBER OF SEG ID NOS: 35

SOFTWARE: PatentIn Ver. 2.1

SEQ ID NO 11

LENGTH: 257
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US-09-103-663-11
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US-08-756-387B-2
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Best Local
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
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INFORMATION FOR SEQ ID NO: 2:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: Verser, Carol Talkington REGISTRATION NUMBER: 37,459 REFERENCE/DOCKET NUMBER: DI-1 TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/0
FILING DATE: No. 5945294
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
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APPLICANT: Wassom, Donald L.
TITLE OF INVENTION: Method to Detect
NUMBER OF SEQUENCES: 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 257 amino acids
TYPE: amino acid
TOPOLOGY: linear
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Similarity 100.0%; Pred. No. 1.3
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RESULT 39
US-08-897-956A-1
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US-09-285-873-2
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Best Local Similarity 100.0%;
Matches 7; Conservative (
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                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: US/08/756,387
APPLICATION NUMBER: US/08/756,387
FILING DATE: NO. 6309832ember 26, 1
ATTORNEY/AGENT INFORMATION:
NAME: Verser, Carol Talkington
REGISTRATION NUMBER: 37,459
REFERENCE/DOCKET:NUMBER: DI-1
                                                                                                                                                                                                                                                                                  TELEFAX: 970/484-9505
INFORMATION FOR SEQ ID NO:
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LENGTH: 257 amino acids
TYPE: amino acid
TOPOLOGY: linear
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OPERATING SYSTEM: Windows 95
SOFTWARE: WordPerfect for Windows, Version 7.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/285,873
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MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                 TELECOMMUNICATION INFORMATION: TELEPHONE: 970/493-7272
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CORRESPONDENCE ADDRESS:
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CLASSIFICATION:
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                                                                GSLSEET
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Sequence 1, Application US/08897956A Patent No. 6423512 GENERAL INFORMATION:

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APPLICANT: Mary Ellen ulyam
APPLICANT: Philip Lake
APPLICANT: Hermann Gram
TITLE OP INVENTION: Fusion Polypeptides
FILE REFERENCE: 600-7244/CPA
CURRENT APPLICATION NUMBER: US/08/897,956A
CURRENT FILING DATE: 1997-07-21
PRIOR APPLICATION NUMBER: 60/022,689
PRIOR FILING DATE: 1996-07-26
NUMBER OF SEQ ID NOS: 38
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 257
TYPE: PRT
ORGANISM: Homo Sapiens
US-08-897-956A-1
                                                                                                                                                                                                                                                           APPLICANT: MARC J. Rubenfield et al.
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO PSEUDOMONAS;
TITLE OF INVENTION: NERUGINOSA FOR DIAGNOSTICS AND THERAPEUTICS
FILE REFERENCE; 107196.116
CURRENT APPLICATION NUMBER: US/09/252,991A
CURRENT FILING DATE: 1999-02-18
PRIOR APPLICATION NUMBER: US 60/074,788
PRIOR FILING DATE: 1998-02-18
PRIOR FILING DATE: 1998-07-27
NUMBER OF SEQ ID NOS: 33142
SEQ ID NO 17952
TYPE: PRT
ORGANISM: Pseudomonas aeruginosa
US-09-252-991A-17952
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Search completed: October Job time : 43 secs
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US-09-252-991A-17952
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PATENT NO. 6551795
GENERAL INFORMATION:
APPLICANT: Marc J. Rubenfield et al.
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/ Cgn2_6/ptodata/2/pubpaa/USO9_NEW_PUB.pep:*
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Sequence 499, App
Sequence 5043, App
Sequence 355, App
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US-09-893-737-322

US-10-055-098-163

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APPLICANT: IKEDA, HARUO
APPLICANT: ISHIKAWA, JUN
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHIBA, TADAYOSHI
APPLICANT: SHAKKI, YOSHIYUKI
APPLICANT: HATTORI MASAHIRA
TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
FILE REFERENCE: 249-262
CURRENT APPLICATION NUMBER: US/10/156,761
CURRENT FILING DATE: 2002-05-29
PRIOR APPLICATION NUMBER: JP 2011-204089
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR APPLICATION NUMBER: JP 2001-272697
PRIOR FILING DATE: 2001-08-02
NUMBER OF SEQ ID NOS: 15109
SEQ ID NO 10882
LENGTH: 218
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                Query Match
Best Local Similarity
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                                                                                ; TYPE: PRT ; ORGANISM: Streptomyces avermitilis US-10-156-761-10882
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 463 VGGVLLLAL 471
                             Conservative
                          1.7%; Score 9; DB:
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7ative 0; Mismatches
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US-08-424-550B-52
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US-10-127-032-94

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Sequence 44, Appli
Sequence 52, Appli
Sequence 11, Appl
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Sequence 13675, A
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Sequence 337, Ap
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TYPE: PRT
ORGANISM: Grue americana
US-10-156-424A-13
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US-10-080-170-438
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PRIOR FILING DATE: 2001-05-25
NUMBER OF SEQ ID NOS: 32
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 13, Application US/10156424A Publication No. US20030039999A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                             TITLE OF INVENTION: Antimicrobial Peptides and Methods of TITLE OF INVENTION: Use FILE REFERENCE: 35718/238472 CURRENT APPLICATION NUMBER: US/09/950,933A CURRENT FILING DATE: 2001-09-11 PRIOR APPLICATION NUMBER: 60/232,569 PRIOR FILING DATE: 2000-09-13 NUMBER OF SEQ ID NOS: 99 SOFTWARE: FastSEQ for Windows Version 4.0 SEQ ID NO 70
Sequence 438, Application US/10080170
Publication No. US20030129601A1
GENERAL INFORMATION:
APPLICANT: COLE, S.T.
APPLICANT: COLE, S.T.
TITLE OF INVENTION: COMPARATIVE MYCOBACTERIAL GENOMICS AS A TOOL FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 70, Application US/09950933A Patent No. US20020166141A1 GENERAL INFORMATION:
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Best Local Similarity
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APPLICANT: Suh, Woong-Kyung
APPLICANT: Mak, Tak W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CURRENT APPLICATION NUMBER: US/10/156,424A CURRENT FILING DATE: 2002-09-10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE OF INVENTION: B7 Related Protein-2 Molecules and Uses Thereof FILE REFERENCE: 01-384-A
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TYPE: PRT
ORGANISM: Glycine max
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100.0%; Pred. No. 12
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; ORGANISM: Homo mapiens
US-10-102-806-499
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TYPE; PRT
; ORGANISM: Mycobacterium tuberculosis
US-10-080-170-438
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CURRENT FILING DATE: 2002-06-10
PRIOR APPLICATION NUMBER: 60/270,123
PRIOR FILING DATE: 2001-02-22
NUMBER OF SEQ ID NOS: 652
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 438
                                                                                                                            GENERAL INFORMATION:
APPLICANT: Ruben et al.
APPLICANT: Ruben et al.
TITLE OF INVENTION: Colon and Colon Cancer Associated Polynucleotides and Polypeptide
FILE REFERENCE: PA005P1
CURRENT APPLICATION NUMBER: US/10/106,698
CURRENT FILING DATE: 2002-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQ ID NO 499
LENGTH: 238
                                                                                                                                                                                                                                                          Sequence 5043, Application US/10106698 Publication No. US20030109690A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 1.5%; Score 8; DB: Best Local Similarity 100.0%; Pred. No. 24 Matches 8; Conservative 0; Mismatches
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Matches 8; Conserv
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                                CURRENT FILING DATE: 2002-03-27
PRIOR APPLICATION NUMBER: PCT/US00/26524
PRIOR FILING DATE: 2000-09-28
PRIOR APPLICATION NUMBER: US 60/157,137
PRIOR FILING DATE: 1999-09-29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRIOR APPLICATION NUMBER: 60/124,270 PRIOR FILING DATE: 1999-03-12 NUMBER OF SEQ ID NOS: 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRIOR APPLICATION NUMBER: 09/925,298
PRIOR FILING DATE: 2001-08-10
PRIOR APPLICATION NUMBER: PCT/US00/05881
PRIOR FILING DATE: 2000-03-08
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT APPLICATION NUMBER: US/10/102,806
CURRENT FILING DATE: 2002-03-22
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: PatentIn
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Rosen et al.
TITLE OF INVENTION: Nucleic Acids, Proteins and Antibodies
FILE REFERENCE: PA103D1C1
FILING DATE: 1999-11-03
                    APPLICATION NUMBER: US 60/163,280
                                                                                                                                                                                                                                                                                                                                                                                                                                379 GSLSEETP 386
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o. US20030054421A1
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CURRENT FILING DATE: 2001-11-19
PRIOR APPLICATION NUMBER: 60/049787
PRIOR APPLICATION NUMBER: 60/049787
PRIOR APPLICATION NUMBER: 60/06250
PRIOR APPLICATION NUMBER: 60/06250
PRIOR FILING DATE: 1997-10-17
PRIOR PPLICATION NUMBER: 60/065186
PRIOR PPLICATION NUMBER: 60/065181
PRIOR APPLICATION NUMBER: 60/065311
PRIOR APPLICATION NUMBER: 60/066770
PRIOR FILING DATE: 1997-11-13
PRIOR APPLICATION NUMBER: 60/06770
PRIOR PILING DATE: 1997-11-24
PRIOR APPLICATION NUMBER: 60/075945
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Matches 8; Conservative
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SOFTWARE: PatentIn Ver. 3.0
SEQ ID NO 5043
LENGTH: 255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Patent No. US2007
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APPLICANT:
APPLICANT:
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APPLICANT:
                                                                                                                                                                                                                                                            TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Acids Encoding the Same FILE REFERENCE: P2730P1C63
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NAME/KEY: MISC PEATURE
LOCATION: (242)
OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
NAME/KEY: MISC FEATURE
LOCATION: (248)
OTHER INFORMATION: Xaa equals any of the naturally occurring L-amino acids
NAME/KEY: MISC FEATURE
NAME/KEY: MISC FEATURE
LOCATION: (249)
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                                                                                                                                                                                                                                                                                                                                                                                                                       Roy, Margaret Ann
Stewart, Timothy A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Grimaldi, J. Christopher
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APPLICATION NUMBER: 60/078910 FILING DATE: 1998-03-20 APPLICATION NUMBER: 60/083322 FILING DATE: 1998-04-28

APPLICATION NUMBER: 60/084600 FILING DATE: 1998-05-07 APPLICATION NUMBER: 60/087106

PRIOR PRIOR

DR APPLICATION NUMBER: 60/088021
DR FILING DATE: 1998-06-04
DR FILING DATE: 1998-06-04
DR FILING DATE: 1998-06-04
DR APPLICATION NUMBER: 60/088026
DR FILING DATE: 1998-06-04
DR FILING DATE: 1998-06-04

DR FILING DATE: 1998-05-28

PR APPLICATION NUMBER: 60/087607

PR FILING DATE: 1998-06-02

PR APPLICATION NUMBER: 60/087609

PR FILING DATE: 1998-06-02

PR APPLICATION NUMBER: 60/087759

PR APPLICATION NUMBER: 60/087759

PR APPLICATION NUMBER: 60/087827

PR APPLICATION NUMBER: 60/087827

PR FILING DATE: 1998-06-03

PR FILING DATE: 1998-06-03

PRIOR PRIOR PRIOR

DR FILING DATE: 1998-06-05
DR APPLICATION NUMBER: 60/088212
DR FILING DATE: 1998-06-05
DR APPLICATION NUMBER: 60/088217
DR FILING DATE: 1998-06-05
DR FILING DATE: 1998-06-09
DR APPLICATION NUMBER: 60/088734
DR APPLICATION NUMBER: 60/088734
DR APPLICATION NUMBER: 60/088738
DR APPLICATION NUMBER: 60/088738
DR FILING DATE: 1998-06-10
DR APPLICATION NUMBER: 60/088738
DR FILING DATE: 1998-06-10

: 1998-06-10 NUMBER: 60/088742

DR APPLICATION NUMBER: 60/088028
DR PÍLING DATE: 1998-06-04
DR APPLICATION NUMBER: 60/088029
DR FILING DATE: 1998-06-04
DR APPLICATION NUMBER: 60/088030
DR FILING DATE: 1998-06-04
DR APPLICATION NUMBER: 60/088033
DR FILING DATE: 1998-06-04
DR APPLICATION NUMBER: 60/088036
DR APPLICATION NUMBER: 60/088167
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DR PELICATION NUMBER: 60/088742
DR FILING DATE: 1998-06-10
DR FILING DATE: 1998-06-10
DR FILING DATE: 1998-06-10
DR PELICATION NUMBER: 60/088824
DR PELICATION NUMBER: 60/088824
DR PELICATION NUMBER: 60/088826
DR PELING DATE: 1998-06-10
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DR FILING DATE: 1998-06-11
DR APPLICATION NUMBER: 60/088876
DR FILING DATE: 1998-06-11
DR APPLICATION NUMBER: 60/089876
DR FILING DATE: 1998-06-11
DR APPLICATION NUMBER: 60/089105
DR APPLICATION NUMBER: 60/089105
DR APPLICATION NUMBER: 60/089105
DR FILING DATE: 1998-06-16
DR APPLICATION NUMBER: 60/089512
DR APPLICATION NUMBER: 60/089514
DR APPLICATION NUMBER: 60/089532
DR FILING DATE: 1998-06-16
DR APPLICATION NUMBER: 60/089536
DR APPLICATION NUMBER: 60/089536
DR APPLICATION NUMBER: 60/089536
DR APPLICATION NUMBER: 60/089536
DR FILING DATE: 1998-06-17
DR APPLICATION NUMBER: 60/089536
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DR APPLICATION NUMBER: 60/089536
DR FILING DATE: 1998-06-17
DR APPLICATION NUMBER: 60/089538
DR FILING DATE: 1998-06-17
DR APPLICATION NUMBER: 60/089538
DR FILING DATE: 1998-06-17
DR APPLICATION NUMBER: 60/089538
DR FILING DATE: 1998-06-17

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RESULT 8
US-09-989-723-355
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Best Local
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CURRENT APPLICATION NUMBER: US/09/989,723
CURRENT FILING DATE: 2001-11-19
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OR APPLICATION NUMBER: 60/049787

OR FILING DATE: 1997-06-16

OR APPLICATION NUMBER: 60/062250

OR FILING DATE: 1997-10-17

OR APPLICATION NUMBER: 60/065186

OR FILING DATE: 1997-11-12

OR APPLICATION NUMBER: 60/065311

OR APPLICATION NUMBER: 60/066770

OR FILING DATE: 1997-11-13

OR APPLICATION NUMBER: 60/066770

OR FILING DATE: 1997-11-24
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OR FILING DATE: 1998-07-02
OR APPLICATION NUMBER: 60/091633
OR FILING DATE: 1998-07-02
OR APPLICATION NUMBER: 60/091978
OR FILING DATE: 1998-07-07
OR APPLICATION NUMBER: 60/091982
OR FILING DATE: 1998-07-07
OR APPLICATION NUMBER: 60/092182
OR FILING DATE: 1998-07-09
DR FILING DATE: 1997-11-24

DR APPLICATION NUMBER: 60/075945

DR APPLICATION NUMBER: 60/075945

DR APPLICATION NUMBER: 60/078910

DR FILING DATE: 1998-03-20

DR APPLICATION NUMBER: 60/083322

DR FILING DATE: 1998-04-28

DR APPLICATION NUMBER: 60/084600

DR APPLICATION NUMBER: 60/084600

DR APPLICATION NUMBER: 60/087106
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4 VLLLALLG 11
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Baker, Kevin P.
Botstein, David
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Grimaldi, J. Christopher
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Gerritsen, Mary E.
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Kljavin, Ivar J.
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, Margaret Ann
wart, Timothy A.
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OR FILING DATE: 1998-06-11
OR APPLICATION NUMBER: 60/088876
OR APPLICATION NUMBER: 60/088876
OR FILING DATE: 1998-06-11
OR APPLICATION NUMBER: 60/08940
OR FILING DATE: 1998-06-16
OR APPLICATION NUMBER: 60/08941
OR APPLICATION NUMBER: 60/089512
OR APPLICATION NUMBER: 60/089514
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OR APPLICATION NUMBER: 60/088655
OR FILING DATE: 1998-06-10
OR APPLICATION NUMBER: 60/088734
OR FILING DATE: 1998-06-10
OR APPLICATION NUMBER: 60/088738
OR FILING DATE: 1998-06-10
OR APPLICATION NUMBER: 60/08874
OR APPLICATION NUMBER: 60/088810
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OR APPLICATION NUMBER: 60/088810
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OR APPLICATION NUMBER: 60/088810
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APPLICATION NUMBER: 60/08826
FILING DATE: 1998-06-10
APPLICATION NUMBER: 60/088858
FILING DATE: 1998-06-11
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APPLICATION 1
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APPLICATION !
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                                         1998-06-17
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APPLICATION NUMBER: 60/088026 FILING DATE: 1998-06-04 APPLICATION NUMBER: 60/087827 FILING DATE: 1998-06-03 APPLICATION NUMBER: 60/088021 APPLICATION NUMBER: 60/088028 APPLICATION NUMBER: 60/087759 FILING DATE: 1998-06-04 1998-06-04 1998-06-04 1998-06-02 1998-06-02 1998-06-02 1998-05-28 60/088025 60/087607 60/087609

1998-06-04 1998-06-04 60/088029

FILING DATE: 1998-06-04
APPLICATION NUMBER: 60/088326
FILING DATE: 1998-06-04
APPLICATION NUMBER: 60/088167 FILING DATE: 1998-06-04 APPLICATION NUMBER: 60/088033 APPLICATION NUMBER: 60/088030

FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088202
FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088212 FILING DATE: 1998-06-05

1998-06-17 1998-06-17 60/089538

NUMBER: 60/089600 1998-06-17 1998-06-17 60/089598 60/089599

APPLICATION NUMBER: 60/089801 FILING DATE: 1998-06-18 APPLICATION NUMBER: 60/089907 FILING DATE: 1998-06-18

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FILE REFERENCE: P2730PIC56
CURRENT APPLICATION NUMBER: US/09/989,279
CURRENT FILING DATE: 2001-11-19
PRIOR APPLICATION NUMBER: 60/049787
PRIOR PILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR FILING DATE: 1997-11-12
PRIOR PILING DATE: 1997-11-12
PRIOR PILING DATE: 1997-11-13
PRIOR APPLICATION NUMBER: 60/065311
PRIOR APPLICATION NUMBER: 60/06570
PRIOR APPLICATION NUMBER: 60/066770
PRIOR APPLICATION NUMBER: 60/075945
PRIOR APPLICATION NUMBER: 60/075945
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US-09-989-279-355
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APPLICANT:
APPLICANT:
APPLICANT:
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Best Local
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PRIOR APPLICATION NUMBER: 60/092182
PRIOR FILING DATE: 1998-07-09
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                                           FILING DATE: 1998-05-28
APPLICATION NUMBER: 60/087607
FILING DATE: 1998-06-02
APPLICATION NUMBER: 60/087609
                                                                                                         FILING DATE: 1998-04-28
APPLICATION NUMBER: 60/084600
FILING DATE: 1998-05-07
APPLICATION NUMBER: 60/087106
                                                                                                                                                                         FILING DATE: 1998-02-25
APPLICATION NUMBER: 60/078910
FILING DATE: 1998-03-20
APPLICATION NUMBER: 60/083322
             FILING DATE:
APPLICATION 1
FILING DATE:
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8; Conserv
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Grimaldi, J. Christopher
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Botstein, David
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Roy, Margaret Ann
Stewart, Timothy
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20020072496A1
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             NUMBER: 60/087759
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 1998-06-02
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/ 100.0%; Prr
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PRIOR PRIOR

DR FILING DATE: 1998-06-26

PR APPLICATION NUMBER: 60/090863

PR FILING DATE: 1998-06-26

PR APPLICATION NUMBER: 60/091360

PR FILING DATE: 1998-07-01

PR FILING DATE: 1998-07-02

PR APPLICATION NUMBER: 60/091478

PR FILING DATE: 1998-07-02

PR APPLICATION NUMBER: 60/091514

PR FILING DATE: 1998-07-02

PR FILING DATE: 1998-07-02

PR FILING DATE: 1998-07-02

PR APPLICATION NUMBER: 60/091519

PR FILING DATE: 1998-07-02

PR APPLICATION NUMBER: 60/091626

PR APPLICATION NUMBER: 60/091633

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PR APPLICATION NUMBER: 60/091978

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APPLICATION NUMBER: 60/090690 FILING DATE: 1998-06-25 APPLICATION NUMBER: 60/090694

FILING DATE: 1998-06-25 APPLICATION NUMBER: APPLICATION NUMBER: APPLICATION NUMBER: FILING DATE:

FILING DATE:

1998-06-25 1998-06-24 1998-06-24

60/090678 60/090676

FILING DATE:

1998-06-25

FILING DATE: 1998-06-25 APPLICATION NUMBER: 60/090862 APPLICATION NUMBER: 60/090696 APPLICATION NUMBER: 60/090695 FILING DATE: 1998-06-25 FILING DATE: 1998-06-24 APPLICATION NUMBER: 60/090445 APPLICATION NUMBER: 60/090444

FILING DATE:

FILING DATE:

APPLICATION NUMBER: 60/090472

1998-06-24

60/090535

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APPLICATION NUMBER:

LING DATE:

1998-06-24

APPLICATION NUMBER: 60/090542

60/090557

APPLICATION NUMBER: 60/090540

1998-06-24

FILING DATE:

APPLICATION NUMBER: 60/090429 FILING DATE: 1998-06-24 APPLICATION NUMBER: 60/090431 APPLICATION NUMBER: 60/090355 FILING DATE: 1998-06-23 APPLICATION NUMBER: 60/090349 FILING DATE: 1998-06-23

FILING DATE:

APPLICATION NUMBER: 60/090435

1998-06-24

LING DATE:

1998-06-24

APPLICATION NUMBER: 60/090254

LING DATE:

1998-06-22

APPLICATION NUMBER:

1998-06-22 1998-06-19

60/090252 60/090246

APPLICATION NUMBER: FILING DATE: APPLICATION NUMBER: 60/089948 FILING DATE: 1998-06-19 APPLICATION NUMBER: 60/089947 APPLICATION NUMBER: 60/089908

1998-06-19

1998-06-18

APPLICATION NUMBER: 60/089952

APPLICATION NUMBER: FILING DATE: 1998-0 APPLICATION NUMBER:

NUMBER: 60/ : 1998-06-03

APPLICATION NUMBER:

60/088025

60/088021 60/087827

DATE: 1998-06-04

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APPLICATION NUMBER: 60/091519
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Score 8; DB 9; Pred. No. 41; 0; Mismatches
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APPLICATION NUMBER: 60/088824 FILING DATE: 1998-06-10 APPLICATION NUMBER: 60/088826

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APPLICATION NUMBER: 60/088033 APPLICATION NUMBER: 60/088030 PRIOR PRIOR

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APPLICATION NUMBER: 60/089532
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APPLICATION NUMBER: 60/089538

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NUMBER: 60/089512

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APPLICATION NUMBER: 60/ FILING DATE: 1998-06-16 APPLICATION NUMBER:

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RESULT 10
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CURRENT APPLICATION NUMBER: US/09/989,727
CURRENT FILING DATE: 2001-11-19
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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
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APPLICATION NUMBER: 60/065186
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FILING DATE: 1998-06-02
APPLICATION NUMBER: 60/087827
FILING DATE: 1998-06-03
APPLICATION NUMBER: 60/088021
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FILING DATE: 1997-11-13
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APPLICATION NUMBER: 60/088025
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APPLICATION NUMBER: 60/088026
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APPLICATION NUMBER: 60/087609
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APPLICATION I
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Baker, Kevin P.
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Williams, P. Mickey
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Roy, Margaret Ann
Stewart, Timothy A.
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APPLICANT: Ashkenazi, Avi J.
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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C70
CURRENT APPLICATION NUMBER: US/09/989,731
CURRENT FILING DATE: 2001-11-20
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Roy, Margaret Ann
Stewart, Timothy
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Botstein, David
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NUMBER: 60/ : 1998-06-05 NUMBER: 60/088202

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NUMBER: 60/ : 1998-06-04

FILING DATE:

1998-06-05

APPLICATION NUMBER: 60/088212 FILING DATE: 1998-06-05 APPLICATION NUMBER: 60/088217 FILING DATE: 1998-06-05 APPLICATION NUMBER: 60/088655

FILING DATE: 1998-06-09 APPLICATION NUMBER: 60/088734 FILING DATE: 1998-06-10

APPLICATION NUMBER: 60/088738 FILING DATE: 1998-06-10

1998-06-10

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RESULT 12

US-09-989-732-355

; Sequence 355, Application US/09989732

; Patent No. US20020123463A1

; GENERAL INFORMATION:
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APPLICANT: Ashkenazi,Avi J.
APPLICANT: Baker,Kevin P.
APPLICANT: Botstein,David
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OR FILING DATE: 1998-07-01
OR APPLICATION NUMBER: 60/091519
OR APPLICATION NUMBER: 60/091626
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OR APPLICATION NUMBER: 60/090863

OR FILING DATE: 1998-06-26

OR APPLICATION NUMBER: 60/091360

OR FILING DATE: 1998-07-01

OR APPLICATION NUMBER: 60/091478
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OR APPLICATION NUMBER: 60/091978

OR FILING DATE: 1998-07-07

OR PILICATION NUMBER: 60/091982

OR FILING DATE: 1998-07-07

OR APPLICATION NUMBER: 60/092182

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APPLICATION NUMBER: 60/090694
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APPLICATION NUMBER: 60/090690
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APPLICATION NUMBER: 60/090676
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FILING DATE: 1998-06-10
APPLICATION NUMBER: 60/088858
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APPLICATION NUMBER: 60/088826 APPLICATION NUMBER: 60/088824 FILING DATE: 1998-06-10 APPLICATION NUMBER: 60/ FILING DATE: 1998-06-10 APPLICATION NUMBER: FILING DATE: 1998-06

FILING DATE: 1998-00-11
APPLICATION NUMBER: 60/088876
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PTITING DATE: 1998-06-11

APPLICATION NUMBER: 60/089440 APPLICATION NUMBER: 60/089105

1998-06-16

APPLICATION NUMBER: 60/089514 FILING DATE: 1998-06-16 APPLICATION NUMBER: 60/089512

FILING DATE: 1998-0 APPLICATION NUMBER:

1998-06-16

60/089532

FILING DATE: 1998-06-17
APPLICATION NUMBER: 60/089538
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APPLICATION NUMBER: 60/089598

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OR FILING DATE: 1998-05-28
OR APPLICATION NUMBER: 60/087607
OR APPLICATION NUMBER: 60/087609
OR FILING DATE: 1998-06-02
OR FILING DATE: 1998-06-02
OR APPLICATION NUMBER: 60/087759
OR APPLICATION NUMBER: 60/087827
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OR APPLICATION NUMBER: 60/088021
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OR FILING DATE: 1997-06-16
OR APPLICATION NUMBER: 60/062250
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OR APPLICATION NUMBER: 60/065186
OR FILING DATE: 1997-11-12
OR APPLICATION NUMBER: 60/065311
OR APPLICATION NUMBER: 60/066770
OR APPLICATION NUMBER: 60/066770
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DR FILING DATE: 1998-06-04
DR PAPPLICATION NUMBER: 60/088030
DR FILING DATE: 1998-06-04
DR APPLICATION NUMBER: 60/088033
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DR APPLICATION NUMBER: 60/088326
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APPLICATION NUMBER: 60/084600
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Goddard, Audrey
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Stewart, Timothy A.
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OR APPLICATION NUMBER: 60/089948
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RESULT 13
US-09-991-073-355
                                                                                                                       GENERAL INFORMATION:
APPLICANT: Ashkenazi, Avi J.
APPLICANT: Baker, Kevin P.
APPLICANT: Botstein, David
                                                                                                                                                                                                 Sequence 355, Application US/09991073 Patent No. US20020127576A1
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BR FILLING DATE: 1998-06-25
BR APPLICATION NUMBER: 60/090696
BR FILLING DATE: 1998-06-25
BR APPLICATION NUMBER: 60/090862
BR FILLING DATE: 1998-06-26
BR APPLICATION NUMBER: 60/090863
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APPLICATION NUMBER: 60/090445
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APPLICATION NUMBER: 60/090676
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APPLICATION NUMBER: 60/090678
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APPLICATION NUMBER: 60/091360
FILING DATE: 1998-07-01
APPLICATION NUMBER: 60/091478
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APPLICATION NUMBER: 60/090472
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Fong, Sherman
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Gerritsen, Mary E.
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PRIOR APPLICATION NUMBER: 60/065311
PRIOR FILING DATE: 1997-11-13
PRIOR APPLICATION NUMBER: 60/066770
PRIOR APPLICATION NUMBER: 60/075945
PRIOR APPLICATION NUMBER: 60/075945
PRIOR FILING DATE: 1998-02-25
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CURRENT APPLICATION NUMBER: US/09/991,073
CURRENT FILING DATE: 2001-11-14
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PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
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Stewart, Timothy A
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Grimaldi, J. Christopher
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Kljavin, Ivar J
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60/088826 60/088824 APPLICATION NUMBER: 60/088810 APPLICATION NUMBER: 60/088742 FILING DATE: 1998-06-10

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DATE: 1998-06-10

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RESULT 14
US-09-990-442-355
; Sequence 355, Application US/09990442
; Patent No. US20020132252A1
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APPLICATION NUMBER: 60/091633
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Goddard, Audrey
Godowski, Paul J.
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Baker, Kevin P.
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Napier, Mary A.
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APPLICATION NUMBER: 60/090435 FILING DATE: 1998-06-24 APPLICATION NUMBER: 60/090444

PILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090445
FILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090472
FILING DATE: 1998-06-24

PRIOR

APPLICATION NUMBER: 60/6
APPLICATION NUMBER: 60/6
APPLICATION NUMBER: 60/6-24

60/090431

FILING DATE: 1998-06-23
APPLICATION NUMBER: 60/090355
FILING DATE: 1998-06-23
APPLICATION NUMBER: 60/090429

DR FILING DATE: 1998-06-19
DR APPLICATION NUMBER: 60/090246
DR FILING DATE: 1998-06-22
DR APPLICATION NUMBER: 60/090252
DR FILING DATE: 1998-06-22
DR APPLICATION NUMBER: 60/090254
DR FILING DATE: 1998-06-22
DR APPLICATION NUMBER: 60/090349

APPLICATION NUMBER: 60/089947 FILING DATE: 1998-06-19 APPLICATION NUMBER: 60/089948

APPLICATION NUMBER: 60/089952

LING DATE: 1998-06-19

APPLICATION NUMBER: 60/089907 FILING DATE: 1998-06-18 APPLICATION NUMBER: 60/089908

LING DATE: 1998-06-18

APPLICATION NUMBER: 60/089653 FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089801 FILING DATE: 1998-06-18

APPLICATION NUMBER: 60/089599
FILING DATE: 1998-06-17
APPLICATION NUMBER: 60/089600

LING DATE: 1998-06-17

APPLICATION NUMBER: 60/089538 FILING DATE: 1998-06-17

LING DATE: 1998-06-1

PLICATION NUMBER: 60

60/089532

APPLICATION NUMBER:

60/089598

LING DATE: 1998-06-1

APPLICATION NUMBER: 60/089512 FILING DATE: 1998-06-16

APPLICATION NUMBER: 60/089440 APPLICATION NUMBER: 60/089105

LING DATE: 1998-06-16

LING DATE: LING DATE:

1998-06-12 1998-06-11 1998-06-1

APPLICATION NUMBER: 60/089514

LING DATE: 1998-06-16

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CURRENT FILING DATE: 2001-11-14
PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/065186
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DR APPLICATION NUMBER: 60/088212
DR FILING DATE: 1998-06-05
DR APPLICATION NUMBER: 60/088217
DR FILING DATE: 1998-06-05
DR APPLICATION NUMBER: 60/088655
DR FILING DATE: 1998-06-09
DR APPLICATION NUMBER: 60/088734
DR FILING DATE: 1998-06-10
DR APPLICATION NUMBER: 60/088738
DR FILING DATE: 1998-06-10
DR APPLICATION NUMBER: 60/088742
DR FILING DATE: 1998-06-10
DR APPLICATION NUMBER: 60/088742
DR FILING DATE: 1998-06-10
DR APPLICATION NUMBER: 60/088810
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R APPLICATION NUMBER: 60/088026
R FILING DATE: 1998-06-04
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APPLICATION NUMBER: 60/065311
FILING DATE: 1997-11-13
APPLICATION NUMBER: 60/066770
APPLICATION NUMBER: 60/066770
FILING DATE: 1997-11-24
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APPLICATION WIMBER: 60/083322
FILING DATE: 1998-04-28
APPLICATION WIMBER: 60/084600
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FILING DATE: 1998-02-25
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APPLICATION NUMBER: 60/088167
FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088202
FILING DATE: 1998-06-05
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FILING DATE: 1998-06-04
APPLICATION NUMBER: 60/088033
FILING DATE: 1998-06-04
APPLICATION NUMBER: 60/088326
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APPLICATION NUMBER: 60/087106
FILING DATE: 1998-05-28
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APPLICATION NUMBER: 60/088025
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FILING DATE: 1998-06-02
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art, Timothy A.
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OR APPLICATION NUMBER: 60/089948
OR FILING DATE: 1998-06-19
OR APPLICATION NUMBER: 60/089952
OR FILING DATE: 1998-06-22
OR APPLICATION NUMBER: 60/090254
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OR APPLICATION NUMBER: 60/090355
OR FILING DATE: 1998-06-22
OR APPLICATION NUMBER: 60/090355
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APPLICATION NUMBER:
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APPLICATION NUMBER: 60/089532 FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089538 FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/ APPLICATION NUMBER: 60/ FILING DATE: 1998-06-16 FILING DATE: 1998-06-16 60/089598 60/089514

OR FILING DATE: 1998-06-17
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NUMBER: NUMBER: NUMBER: 1998-06-24 1998-06-24 1998-06-24 60/090535 60/090472 60/090445 60/090444

NUMBER: 60/090542 NUMBER: 60/ : 1998-06-24 NUMBER: : 1998-06-24 NUMBER: 60/ 1998-06-24 60/090540 60/09055

APPLICATION NUMBER: 60/090676
FILING DATE: 1998-06-25
APPLICATION NUMBER: 60/090678

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US-09-991-163-355
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OR FILING DATE: 1998-07-02
OR APPLICATION NUMBER: 60/091978
OR APPLICATION NUMBER: 60/091982
OR APPLICATION NUMBER: 60/091982
OR FILING DATE: 1998-07-07
OR APPLICATION NUMBER: 60/92182
OR FILING DATE: 1998-07-09
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DR FILING DATE: 1998-06-26
DR APPLICATION NUMBER: 60/090863
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DR APPLICATION NUMBER: 60/091360
DR FILING DATE: 1998-07-01
DR APPLICATION NUMBER: 60/091478
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FILING DATE: 1998-06-25
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Baker, Kevin P.
Botstein, David
                                                                                                                                    Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Kljavin, Ivar J.
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                                           Roy, Margaret Ann
Stewart, Timothy A.
Tumas, Daniel
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Gerritsen, Mary E.
Watanabe, Colin K. Williams, P. Mickey Wood, William I.
                                                                                                          Pan, James
                                                                                                                                                                                                                                                Fong, Sherman
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                                                                                                                                                                                                                                                                              Eaton, Dan L.
                                                                                                                      Napier, Mary A.
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                                                                                        Paoni,Nicholas F.
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5. 41;
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PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/065186
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OR APPLICATION NUMBER: 60/088212
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DR APPLICATION NUMBER: 60/088029
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FILING DATE: 1997-11-12
APPLICATION NUMBER: 60/065311
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APPLICATION NUMBER: 60/088826
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FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088202
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APPLICATION NUMBER: 60/088028
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FILING DATE: 1998-06-03
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APPLICATION NUMBER: 60/087106
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FILING DATE: 1998-06-16

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APPLICATION NUMBER: 60/088876 APPLICATION NUMBER: 60/088861 FILING DATE: 1998-06-11

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FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089538 FILING DATE: 1998-06-17

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APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C25
CURRENT APPLICATION NUMBER: US/09/993,604
CURRENT FILING DATE: 2001-11-14
PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
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FILING DATE: 1998-06-26
APPLICATION NUMBER: 60/091360
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Botstein, David
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Williams, P. Mickey
Wood, William I.
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Goddard, Audrey
Godowski, Paul J.
Grimaldi, J.Christopher
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Stewart, Timothy A.
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Kljavin, Ivar i
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FILING DATE: 1998-06-23 APPLICATION NUMBER: 60/090429 FILING DATE: 1998-06-23 APPLICATION NUMBER: 60/090355 FILING DATE: 1998-06-22 APPLICATION NUMBER: 60/090349

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PR APPLICATION NUMBER: 60/090557

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OR FILING DATE: 1997-10-1,

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PR APPLICATION NUMBER: 60/091633

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PR APPLICATION NUMBER: 60/091978

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PR APPLICATION NUMBER: 60/091982

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FILING DATE: 1998-07-02
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11 Similarity 100.0%; Pred. No. 41
8; Conservative 0; Mismatches
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Baker, Kevin P.
Botstein, David
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Williame, P. Mickey
Wood, William I.
                                                                                                                                                                                                                                                                                     Stewart, Timo
Tumas, Daniel
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Gerritsen, Mary E.
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FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088212
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APPLICATION NUMBER: 60/
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APPLICATION NUMBER: 60/089512
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APPLICATION NUMBER: 60/088876
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APPLICATION NUMBER: 60/088026
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APPLICATION NUMBER: 60/088167
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                FILING DATE: 1998-06-16
APPLICATION NUMBER: 60/0
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APPLICATION NUMBER: 60/089440
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APPLICATION NUMBER: 60/090863
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APPLICATION NUMBER: 60/090694
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FILING DATE: 1998-06-17
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APPLICATION NUMBER: 60/090690
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FILING DATE: 1998-06
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APPLICATION NUMBER: 60/089952
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                               PRIOR APPLICATION NUMBER: 60/065311
PRIOR FILING DATE: 1997-11-13
PRIOR APPLICATION NUMBER: 60/066770
PRIOR FILING DATE: 1997-11-24
PRIOR APPLICATION NUMBER: 60/075945
PRIOR FILING DATE: 1998-02-25
PRIOR APPLICATION NUMBER: 60/078910
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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C55
CURRENT APPLICATION NUMBER: US/09/989,721
CURRENT FILING DATE: 2001-11-19
PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR PILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/06250
PRIOR APPLICATION NUMBER: 60/06250
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PRIOR APPLICATION NUMBER: 60/091519
PRIOR FILING DATE: 1998-07-02
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APPLICANT: Baker,Kevin P.
APPLICANT: Botstein,David
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APPLICATION NUMBER: 60/091982
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 APPLICATION
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Gerritsen, Mary E.
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Godowski, Payl J.
Grimaldi, J. Christopher
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Williams, P. Mickey
Wood, William I.
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Stewart, Timothy A.
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Kljavin, Ivar J.
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CURRENT APPLICATION NUMBER: US/09/992,598
CURRENT FILING DATE: 2001-11-14
PRIOR APPLICATION NUMBER: 60/049787
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PRIOR APPLICATION NUMBER: 60/06220
PRIOR APPLICATION NUMBER: 60/065186
PRIOR APPLICATION NUMBER: 60/065311
PRIOR FILING DATE: 1997-11-12
PRIOR APPLICATION NUMBER: 60/066770
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PRIOR FILING DATE: 1997-11-24
PRIOR PILING DATE: 1998-01-25
PRIOR PRILING DATE: 1998-02-25
PRIOR APPLICATION NUMBER: 60/075945
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PRIOR APPLICATION NUMBER: 60/08332
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APPLICANT: Williams, P. Mickey
APPLICANT: Wood, William I.
APPLICANT: Wood, William I.
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C20
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Grimaldi, J.Christopher
Gurney, Austin L.
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Gerritsen, Mary E.
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Botstein, David
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wart, Timothy
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APPLICATION NUMBER: 60/088742
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FILING DATE: 1998-06-10
APPLICATION NUMBER: 60/088738
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FILING DATE: 1998-06-05
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FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088212
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FILING DATE: 1998-06-04
APPLICATION NUMBER: 60/088030
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FILING DATE: 1998-06-04
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FILING DATE: 1998-06-03
APPLICATION NUMBER: 60/088021
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APPLICATION NUMBER: 60/089908 FILING DATE: 1998-06-18 APPLICATION NUMBER: 60/089947

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PRIOR APPLICATION NUMBER: 60/065186
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Gerritsen, Mary E.
Goddard, Audrey
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Williams, P. Mickey
Wood, William I.
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Grimaldi, J. Christopher
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Stewart, Timothy
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FILING DATE: 1998-07-02 APPLICATION NUMBER: 60/091544 FILING DATE: 1998-07-01 APPLICATION NUMBER: 60/091478 FILING DATE: 1998-06-26 APPLICATION NUMBER: 60/091360 APPLICATION NUMBER: 60/090863 FILING DATE:
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PR APPLICATION NUMBER: 60/091633

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Publication No. US20
GENERAL INFORMATION:
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Gerritsen, Mary E.
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RESULT 22
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; GENERAL INFORMATION:
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1998-07-07
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CURRENT FILING DATE: 2001-11-14
PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/065186
PRIOR APPLICATION NUMBER: 60/065186
PRIOR APPLICATION NUMBER: 60/065311
PRIOR APPLICATION NUMBER: 60/065311
PRIOR FILING DATE: 1997-11-13
PRIOR FILING DATE: 1997-11-13
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                            OR APPLICATION NUMBER: 60/088028
OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088029
OR APPLICATION NUMBER: 60/088030
OR APPLICATION NUMBER: 60/088030
OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088033
OR PILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088326
OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088326
OR FILING DATE: 1998-06-04
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OR FILING DATE: 1998-06-02
OR APPLICATION NUMBER: 60/087609
OR FILING DATE: 1998-06-02
OR APPLICATION NUMBER: 60/087759
OR FILING DATE: 1998-06-02
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OR FILING DATE: 1998-05-
OR APPLICATION NUMBER: 6
OR FILING DATE: 1998-05-
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APPLICATION NUMBER: 60/088021
FILING DATE: 1998-06-04
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FILING DATE: 1998-03-20
APPLICATION NUMBER: 60/083322
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FILING DATE: 1997-11-24
APPLICATION NUMBER: 60/075945
FILING DATE: 1998-02-25
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Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
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Stewart, Timothy
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Botstein, David
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Matches

APPLICATION NUMBER: 60/088212 FILING DATE: 1998-06-05

APPLICATION NUMBER:

60/088217

FILING DATE: FILING DATE:

1998-06-05

APPLICATION NUMBER: 60/088655 FILING DATE: 1998-06-09

APPLICATION NUMBER: 60/088734

APPLICATION NUMBER: 60/088738

1998-06-10

APPLICATION N FILING DATE:

NUMBER:

60/088202 60/088167

1998-06-05

APPLICATION NUMBER: 60/ FILING DATE: 1998-06-05

PRIOR

APPLICATION NUMBER: 60/088824

FILING DATE:

1998-06-10 1998-06-10

APPLICATION NUMBER: 60/088742

1998-06-1

APPLICATION NUMBER: 60/088810

FILING DATE: FILING DATE: FILING DATE:

FILING DATE: 1998-06-10 APPLICATION NUMBER: 60/088858

FILING DATE: 1998-06-11 APPLICATION NUMBER: 60/088861

FILING DATE: 1998-06-11
APPLICATION NUMBER: 60/088876

FILING DATE: 1998-00 APPLICATION NUMBER:

1998-06-10

60/088826

FILING

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Sequence 355, Application US/
Publication No. US200201976.5
GENERAL INFORMATION:
APPLICANT: Ashkenazi, Avi J.
APPLICANT: Baker, Kevin P.
APPLICANT: Botstein, David
APPLICANT: Desnoyers, Luc
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US-09-991-181-355
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DR APPLICATION NUMBER: 60/091633
DR FILING DATE: 1998-07-02
DR APPLICATION NUMBER: 60/091978
DR FILING DATE: 1998-07-07
DR APPLICATION NUMBER: 60/091982
DR APPLICATION NUMBER: 60/09182
DR APPLICATION NUMBER: 60/092182
DR FILING DATE: 1998-07-09
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R APPLICATION NUMBER: 6
R FILING DATE: 1998-96-
R APPLICATION NUMBER: 6
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APPLICATION NUMBER: 60/090676
FILING DATE: 1998-06-25
APPLICATION NUMBER: 60/090678
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APPLICATION NUMBER: 60/090557
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APPLICATION NUMBER:
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APPLICATION NUMBER: 60/091519
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APPLICATION NUMBER: 60/091626
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8; Conserv
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DATE: 1998-07-02
Fong, Sherman
             Eaton, Dan L.
Ferrara, Napoleone
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                                                                                                      Application US/09991181
5. US20020197615A1
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PRIOR PRIOR PRIOR

FILING DATE: 1998-06 APPLICATION NUMBER:

1998-06-22

60/090252

APPLICATION IN FILING DATE:
R FILING DATE:
R FILING DATE:

NUMBER:

60/090355

1998-06-23

1998-06-23

1998-06-22

60/090349

NUMBER: 60/090429: 1998-06-24

APPLICATION N
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FILING DATE: 1998-06-22 APPLICATION NUMBER: 60/090254

PRIOR PRIOR PRIOR

APPLICATION NUMBER: 60/089952 FILING DATE: 1998-06-19 APPLICATION NUMBER: 60/090246

APPLICATION NUMBER: 60/089947 FILING DATE: 1998-06-19 APPLICATION NUMBER: 60/089948 FILING DATE: 1998-06-19

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FILING DATE: 1998-06-18
APPLICATION NUMBER: 60/089907
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APPLICATION NUMBER: 60/089908
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FILING DATE: 1998-06-17
APPLICATION NUMBER: 60/089653
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APPLICATION NUMBER: 60/089600

1998-06-17

FILING DATE:

APPLICATION NUMBER: 60/089598 FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089599

FILING DATE:

1998-06-17

FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089538 FILING DATE: 1998-06-16 APPLICATION NUMBER: 60/089532

APPLICATION NUMBER: APPLICATION NUMBER:

1998-06-16

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APPLICATION NUMBER: 60/089440 APPLICATION NUMBER: 60/089105

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FILING DATE: 1998-06-12

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APPLICATION NUMBER: 60/088026
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APPLICATION NUMBER: 60/078910
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Gurney, Austin L.
Kljavin, Ivar J.
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Gerritsen, Mary E.
Goddard, Audrey
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art, Timothy A.
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APPLICANT: Baker,Kevin P.
APPLICANT: Botstein,David
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Gurney, Austin L.
Kljavin, Ivar J.
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                                                       FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088655
FILING DATE: 1998-06-09
APPLICATION NUMBER: 60/088734
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FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088202
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APPLICATION NUMBER: 60/088212
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APPLICATION NUMBER: 60/088029
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APPLICATION NUMBER: 60/088217
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Williams, P. Mickey
Wood, William I.
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Stewart, Timothy
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APPLICATION NUMBER: 60/089514
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FILING DATE: 1998-06-12
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APPLICANT: Ashkenazi, Avi J.
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GENERAL INFORMATION:
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APPLICATION NUMBER: 60/091633
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FILING DATE: 1998-07-07
APPLICATION NUMBER: 60/091982
FILING DATE: 1998-07-07
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FILING DATE: 1998-06-25
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APPLICATION NUMBER: 60/090678
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FILING DATE: 1998-06-24
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Stewart, Timothy A.
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Kljavin, Ivar J.
                                                                                                                                                                                                                                  Godowski, Paul J.
Grimaldi, J. Christopher
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Fong, Sherman
Gerber, Hanspeter
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Botstein, David
                                                                                                    Paoni, Nicholas F.
                                                                                                                                                     Napier, Mary A.
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                                                                                                                                  Pan, James
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RESULT 26
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      APPLICANT: Watanabe, Colin K.
APPLICANT: Williams, P. Mickey
APPLICANT: Wood, William I.
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembrane
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C11
FILE REFERENCE: P2730P1C11
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APPLICATION NUMBER: 60/092182
FILING DATE: 1998-07-09
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APPLICATION NUMBER: 60/091519
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Similarity 100.0%; Pred. No. 41
8; Conservative 0; Mismatches
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Gerritsen, Mary E.
Goddard, Audrey
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Tumas, Daniel
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Ferrara, Napoleone
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Botstein, David
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wart, Timothy A.
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FILING DATE: 1998-06-03
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APPLICATION NUMBER: FILING DATE: 1998-06 APPLICATION NUMBER:

1998-06-

60/089105

60/089440

APPLICATION NUMBER: 60 FILING DATE: 1998-06-1

NUMBER:

60/089514 60/089512

FILING

DATE: 1998-06-

FILING DATE: 1998-05-10 APPLICATION NUMBER: 60/089532 APPLICATION 104858: 1998-05-17

APPLICATION NUMBER: 60/089538

APPLICATION NUMBER: 60/089599 FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089600

FILING DATE: APPLICATION NUMBER:

1998-06-1998-06-

60/089598

APPLICATION NUMBER: 60/089653 FILING DATE: 1998-06-17

APPLICATION NUMBER: 60/089907 FILING DATE: 1998-06-18 APPLICATION NUMBER: 60/089801

APPLICATION NUMBER: 60/089908

1998-06-18 1998-06-18

60/089947

FILING DATE:

APPLICATION NUMBER: FILING DATE:

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1998-06-19

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RESULT 27
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APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembre
TITLE OF INVENTION: Acids Encoding the Same
TILE REFERENCE: P2730P1C64
CURRENT APPLICATION NUMBER: US/09/989,734
CURRENT FILING DATE: 2001-11-19
PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR APPLICATION NUMBER: 60/065186
PRIOR APPLICATION NUMBER: 60/065186
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/065186
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DR FILING DATE: 1998-07-02
DR PILING DATE: 1998-07-02
DR FILING DATE: 1998-07-02
DR APPLICATION NUMBER: 60/091978
DR APPLICATION NUMBER: 60/091982
DR FILING DATE: 1998-07-07
DR APPLICATION NUMBER: 60/091982
DR FILING DATE: 1998-07-07
DR APPLICATION NUMBER: 60/092182
DR FILING DATE: 1998-07-09
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Baker, Kevin P.
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Williams, P. Micke
Wood, William I.
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Stewart, Timothy A.
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Eaton, Dan L.
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Kljavin, Ivar J
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Grimaldi, J.Christopher
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FILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090540
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APPLICATION NUMBER: 60/090542

APPLICATION NUMBER: 60/090445 FILING DATE: 1998-06-24 APPLICATION NUMBER: 60/090472 FILING DATE: 1998-06-24 APPLICATION NUMBER: 60/090535

FILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090435
FILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090444

FILING DATE: 1998-06-24 APPLICATION NUMBER: 60/090431 FILING DATE: 1998-06-23
APPLICATION NUMBER: 60/090429

APPLICATION NUMBER: FILING DATE: APPLICATION NUMBER: FILING DATE:

60/090355

1998-06-23 1998-06-22

60/090349

APPLICATION NUMBER: 60/090254 FILING DATE: 1998-06-22 APPLICATION NUMBER: 60/090252 APPLICATION NUMBER: 60/090246 FILING DATE: 1998-06-19 APPLICATION NUMBER: 60/089952 APPLICATION NUMBER: 60/089948

FILING DATE: 1998-06-22

FILING DATE: 1998-06-

FILING DATE: 1998-06-24

APPLICATION NUMBER: 60/065311 FILING DATE: 1997-11-13 APPLICATION NUMBER: 60/066770

DATE: 1997-11-24

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OR APPLICATION NUMBER: 60/075945
OR FILING DATE: 1998-02-25
OR PILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/078910
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/083322OR FILING DATE: 1998-05-28
OR APPLICATION NUMBER: 60/087060
OR FILING DATE: 1998-05-28
OR APPLICATION NUMBER: 60/087609
OR FILING DATE: 1998-06-02
OR APPLICATION NUMBER: 60/08759
OR FILING DATE: 1998-06-02
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                                                 PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR PELICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/065186
PRIOR APPLICATION NUMBER: 60/065311
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APPLICANT: Wood, William I.
APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C38
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DR FILLING DATE: 1998-07-07

PR FILLING DATE: 1998-07-07

DR APPLICATION NUMBER: 60/092182

DR FILLING DATE: 1998-07-09

DR FILLING DATE: 1998-07-09
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APPLICATION NUMBER: 60/091633
FILING DATE: 1998-07-02
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APPLICATION NUMBER: 60/075945
FILING DATE: 1998-02-25
APPLICATION NUMBER: 60/078910
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Williams, P. Mickey
Wood, William I.
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Botstein, David
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                                                                                                                                                                                                                                                                                                                                   Margaret Ann
art, Timothy A.
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100.0%; Pr
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PRIOR APPLICATION NUMBER: 60/087106
PRIOR APPLICATION NUMBER: 60/087607
PRIOR APPLICATION ... OR FILING DATE: 1998-06-05
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OR APPLICATION NUMBER: 60/088734
OR FILING DATE: 1998-06-10
OR APPLICATION NUMBER: 60/088738
OR FILING DATE: 1998-06-10
OR APPLICATION NUMBER: 60/088742
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OR APPLICATION NUMBER: 60/088810
OR APPLICATION NUMBER: 60/088810
OR APPLICATION NUMBER: 60/088824 OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088030
OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088033
OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088326 APPLICATION. NUMBER: 60/088167 FILING DATE: 1998-06-05 APPLICATION NUMBER: 60/088202 FILING DATE: 1998-06-05 APPLICATION NUMBER: 60/088212 FILING DATE: 1998-06-04 APPLICATION NUMBER: 60/ FILING DATE: 1998-06-04 FILING DATE: 1998-06-16
APPLICATION NUMBER: 60/089532
FILING DATE: 1998-06-17
APPLICATION NUMBER: 60/089538 APPLICATION NUMBER: 60/088861 FILING DATE: 1998-06-11 APPLICATION NUMBER: 60/088876 FILING DATE: 1998-06-10 APPLICATION NUMBER: 60/088858 FILING DATE: 1998-06-11 FILING DATE: 1998-06-04 APPLICATION NUMBER: 60/088029 APPLICATION NUMBER: 60/087827 FILING DATE: 1998-06-03 FILING DATE: 1998-06-02 APPLICATION NUMBER: 60/ FILING DATE: 1998-03-20 APPLICATION NUMBER: 60/0 FILING DATE: 1998-04-28 FILING DATE: 1998-06-10 APPLICATION NUMBER: 60/088826 FILING DATE: 1998-06-05 APPLICATION NUMBER: 60/088217 FILING DATE: 1998-06-04 FILING DATE: 1998-06-04 APPLICATION NUMBER: 60/088028 APPLICATION NUMBER: 60/088026 APPLICATION NUMBER: 60/088021 FILING DATE: 1998-06-02 1998-05-07 1998-06-16 1998-06-11 1998-06-17 1998-06-16 1998-06-12 60/083322 60/089514 60/089512 60/089440 60/089105 60/088025 60/087759 60/084600

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FILING DATE: 1998-07-02
APPLICATION NUMBER: 60/091544
FILING DATE: 1998-07-01
APPLICATION NUMBER: 60/091519
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APPLICATION NUMBER: 60/090695
FILING DATE: 1998-06-25
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FILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090472
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FILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090444
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APPLICATION NUMBER: 60/090676
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FILING DATE: 1998-06-24
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US-09-993-667-355
; Sequence 355, Ap;
; Publication No.
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Best Local
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APPLICANT:
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                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and TITLE OF INVENTION: Acids Encoding the Same FILE REFERENCE: P2730PC4 CURRENT APPLICATION NUMBER: US/09/993,667 CURRENT FILING DATE: 2001-11-14 PRIOR APPLICATION NUMBER: 60/049787 PRIOR APPLICATION NUMBER: 60/049787 PRIOR FILING DATE: 1997-06-16 PRIOR PELICATION NUMBER: 60/062250 PRIOR PELICATION NUMBER: 60/062250 PRIOR PELICATION NUMBER: 60/065186 PRIOR APPLICATION NUMBER: 60/065186 PRIOR APPLIC
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PRIOR APPLICATION NUMBER: 60/091633
PRIOR FILING DATE: 1998-07-02
PRIOR APPLICATION NUMBER: 60/091978
PRIOR FILING DATE: 1998-07-07
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FILING DATE: 1997-11-13
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FILING DATE: 1998-03-20
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FILING DATE: 1998-02-25
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                                                                                     FILING DATE: 1998-04-28
APPLICATION NUMBER: 60/084600
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Similarity 100.0%;
8; Conservative (
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Roy, Margaret Ann
Stewart, Timothy A
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Goddard, Audrey
Godowski, Paul J.
Grimaldi, J. Christopher
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Watanabe, Colin K.
Williams, P. Mickey
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Kljavin, Ivar J.
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Length 437; Indels

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PRIOR FILING DATE: 1997-06-16
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FILE REFERENCE: P2730P1C44
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CURRENT FILING DATE: 2001-11-15
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NR FILING DATE: 1998-05-28
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FILING DATE: 1998-03-20
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Williams, P. Mickey
Wood, William I.
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Gerber, Hanspeter
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wart, Timothy A.
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APPLICATION NUMBER: 60/090429 FILING DATE: 1998-06-24

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APPLICATION NUMBER: 60/090435

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CURRENT APPLICATION NUMBER: US/09/997,666
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PRIOR APPLICATION NUMBER: 60/084600
PRIOR FILING DATE: 1998-06-02
PRIOR APPLICATION NUMBER: 60/087827
PRIOR PILING DATE: 1998-06-03
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Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
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Botstein, David
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APPLICATION NUMBER: 60/091982 FILING DATE: 1998-07-07 APPLICATION NUMBER: 60/092182 FILING DATE: 1998-07-09

FILING DATE: 1998-07-01
APPLICATION NUMBER: 60/091519
FILING DATE: 1998-07-02
APPLICATION NUMBER: 60/091626
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APPLICATION NUMBER: 60/091478 FILING DATE: 1998-07-02 APPLICATION NUMBER: 60/091544

APPLICATION NUMBER: 60/091360 APPLICATION NUMBER: 60/090863 FILING DATE: 1998-06-26 APPLICATION NUMBER: 60/090862 FILING DATE: 1998-06-26

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APPLICATION NUMBER: 60/090696
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APPLICATION NUMBER: 60/090676

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APPLICATION NUMBER: 60/090472 APPLICATION NUMBER: 60/090445 FILING DATE: 1998-06-24 APPLICATION NUMBER: 60/090444

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APPLICATION NUMBER: 60/091633 FILING DATE: 1998-07-02 APPLICATION NUMBER: 60/091978

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FILING DATE: 1998-06-24
APPLICATION NUMBER: 60/090535
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APPLICATION NUMBER: 60/092182
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APPLICATION NUMBER: 60/090431
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PR APPLICATION NUMBER: 60/088734

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DR APPLICATION NUMBER: 60/088738

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APPLICATION NUMBER: FILING DATE: 1998-06

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CURRENT APPLICATION NUMBER: US/09/990,438
CURRENT FILING DATE: 2001-11-14
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PRIOR TILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
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FILING DATE: 1997-10-17
APPLICATION NUMBER: 60/065186
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FILING DATE: 1997-11-13
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Baker, Kevin P.
Botstein, David
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Kljavin, Ivar J.
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Grimaldi, J.Christopher
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art, Timothy A.
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FILING DATE: 1998-06-12
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Matches
Sequence 355, Application US/09990562
Publication No. US20030027985A1
GENERAL INFORMATION:
APPLICANT: Ashkenazi, Avi J.
APPLICANT: Baker, Kevin P.
APPLICANT: Botsein, David
APPLICANT: Desnoyers, Luc
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APPLICATION NUMBER: 60/090696
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APPLICATION NUMBER: 60/
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APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembra
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730PIC18
CURRENT APPLICATION NUMBER: US/09/990,562
CURRENT APPLICATION NUMBER: 60/049787
PRIOR PELLING DATE: 1997-06-16
PRIOR FILING DATE: 1997-10-17
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/065186
PRIOR APPLICATION NUMBER: 60/06511
PRIOR APPLICATION NUMBER: 60/065311
PRIOR APPLICATION NUMBER: 60/065311
PRIOR FILING DATE: 1997-11-13
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PRIOR PILING DATE: 1997-11-24
PRIOR APPLICATION NUMBER: 60/06770
PRIOR FILING DATE: 1997-11-24
PRIOR APPLICATION NUMBER: 60/075945
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OR APPLICATION NUMBER: 60/088033
OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088326
OR FILING DATE: 1998-06-04
OR APPLICATION NUMBER: 60/088167
OR APPLICATION NUMBER: 60/088202
OR FILING DATE: 1998-06-05
OR APPLICATION NUMBER: 60/088202
OR FILING DATE: 1998-06-05
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FILING DATE: 1998-06-03
APPLICATION NUMBER: 60/088021
FILING DATE: 1998-06-04
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FILING DATE: 1998-06-04
APPLICATION NUMBER: 60/088029
FILING DATE: 1998-06-04
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Roy, Margaret Ann
Stewart, Timothy
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Kljavin, Ivar J
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Godowski, Paul
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Gerber, Hanspeter
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Ferrara, Napoleone
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APPLICATION NUMBER: 60/088738 FILING DATE: 1998-06-10

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60/088734 60/088655 APPLICATION NUMBER: 60/088212 FILING DATE: 1998-06-05 APPLICATION NUMBER: 60/088217

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APPLICATION NUMBER: 60/089105 FILING DATE: 1998-06-12 APPLICATION NUMBER: 60/089440 FILING DATE: 1998-06-16 APPLICATION NUMBER: 60/089512

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1998-06-18

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OR APPLICATION NUMBER: 60/090445
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APPLICATION NUMBER: 60/091478
FILING DATE: 1998-07-02
APPLICATION NUMBER: 60/091544
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                                                                                                                                              INFORMATION:
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8; Conserv
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Baker, Kevin P.
Gerber, Hanspeter
Gerritsen, Mary E.
Goddard, Audrey
Godowski, Paul J.
                                                                Eaton, Dan L.
Ferrara, Napoleone
                                                     Fong, Sherman
                                                                                          Desnoyers, Luc
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DR APPLICATION NUMBER: 60/090254

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DR FILLING DATE: 1998-06-23

DR APPLICATION NUMBER: 60/090355

DR APPLICATION NUMBER: 60/090355

DR FILLING DATE: 1998-06-23

DR APPLICATION NUMBER: 60/090429

DR FILLING DATE: 1998-06-24

DR FILLING DATE: 1998-06-24

DR APPLICATION NUMBER: 60/090431

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FILING DATE: APPLICATION 1

1998-06-19

FILING DATE: APPLICATION

NUMBER: 60/090252 NUMBER: 60/090246

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PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR APPLICATION NUMBER: 60/065186
PRIOR FILING DATE: 1997-11-12
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DR APPLICATION NUMBER: 60/088028

R FILING DATE: 1998-06-04

PR APPLICATION NUMBER: 60/088029

DR FILING DATE: 1998-06-04

R APPLICATION NUMBER: 60/088030
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FILING DATE: 1998-06-05
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APPLICATION NUMBER: 60/088033
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APPLICATION NUMBER: 60/087607
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FILING DATE: 1998-07-01
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APPLICATION NUMBER: 60/090862
FILING DATE: 1998-06-26
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FILING DATE: 1998-06-25
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APPLICATION NUMBER: 60/090678
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APPLICATION NUMBER: 60/091626
FILING DATE: 1998-07-02
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Godowski, Paul J.
Grimaldi, J. Christopher
Gurney, Austin L.
Kljavin, Ivar J.
Paoni, Nicholas F. Roy, Margaret Ann
                                          Napier, Mary A.
                                                                                                                           Gerber, Hanspeter
Gerritsen, Mary E.
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Eaton, Dan L.
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PRIOR FILING DATE: 1998-02-25
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TITLE OF INVENTION: Acids Encoding the SI
FILE REFERENCE: PZ730PIG6
CURRENT APPLICATION NUMBER: US/09/989,726
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FILING DATE: 1998-06-02
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APPLICATION NUMBER: 60/088738
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APPLICATION NUMBER: 60/088742
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FILING DATE: 1998-06-05
APPLICATION NUMBER: 60/088202
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APPLICATION NUMBER: 60/088326
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APPLICATION NUMBER: 60/088030
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APPLICATION NUMBER: 60/088028
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FILING DATE: 1998-06-02
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APPLICATION NUMBER: 60/075945
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Williams, P. Mickey
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                                                                                                                                                                                 NUMBER: 60/088655
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APPLICATION NUMBER: 60/089952
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APPLICATION NUMBER: 60/090246
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APPLICATION NUMBER: 60/088876
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FILING DATE: 1998-06-18
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APPLICATION NUMBER: 60/088861
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RESULT 36
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APPLICANT: Ashkenazi, Avi J.
APPLICANT: Baker, Kevin P.
APPLICANT: Botstein, David
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FILING DATE: 1998-07-07
APPLICATION NUMBER: 60/091982
FILING DATE: 1998-07-07
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FILING DATE: 1998-06-25
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APPLICATION NUMBER: 60/091519
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APPLICATION NUMBER: 60/090862
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                                                                     Paoni, Nicholas F.
Roy, Margaret Ann
Stewart, Timothy A.
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Gerritsen, Mary E.
                             Watanabe, Colin K. Williams, P. Mickey
                                                                                                                                 Napier, Mary A.
                                                                                                                                               Kljavin, Ivar J
                                                                                                                                                                Gurney, Austin L.
                                                                                                                                                                             Grimaldi, J. Christopher
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                                                          Tumas,
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Wood, William I.
Zhang, Zemin
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b. US20030044806A1
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INVENTION:

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OR PELLICATION NUMBER: 60/065311
OR FILING DATE: 1997-11-13
OR APPLICATION NUMBER: 60/066770
OR FILING DATE: 1997-11-24
OR APPLICATION NUMBER: 60/075945
OR APPLICATION NUMBER: 60/078910
OR APPLICATION NUMBER: 60/078910
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/08322
OR FILING DATE: 1998-04-28
OR APPLICATION NUMBER: 60/084600
OR APPLICATION NUMBER: 60/084600
OR APPLICATION NUMBER: 60/084600
OR APPLICATION NUMBER: 60/084600
OR FILING DATE: 1998-05-07

APPLICATION NUMBER: 60/087106 FILING DATE: 1998-05-28 APPLICATION NUMBER: 60/087607

FILING DATE: 1998-06 APPLICATION NUMBER:

1998-06-02

60/087609

PRIOR PRIOR CURRENT FILING DATE: 2001-11-15
PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
PRIOR FILING DATE: 1997-10-17
PRIOR FILING DATE: 1997-10-17

APPLICATION NUMBER: 60/065186 FILING DATE: 1997-11-12

TITLE OF INVENTION: Acids Encoding the Same FILE REFERENCE: P2730P1C28 CURRENT APPLICATION NUMBER: US/09/998,156 CURRENT FILING DATE: 2001-11-15

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DR FILING DATE: 1998-06-02
PR APPLICATION NUMBER: 60/087759
PR FILING DATE: 1998-06-02
PR APPLICATION NUMBER: 60/087827
PR FILING DATE: 1998-06-03
PR APPLICATION NUMBER: 60/088021
PR APPLICATION NUMBER: 60/088025
PR FILING DATE: 1998-06-04
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OR FILING DATE: 1998-06-05
OR APPLICATION NUMBER: 60/088655
OR APPLICATION NUMBER: 60/088655
OR APPLICATION NUMBER: 60/088734
OR APPLICATION NUMBER: 60/088738
OR FILING DATE: 1998-06-10
OR APPLICATION NUMBER: 60/088742
OR FILING DATE: 1998-06-10
OR APPLICATION NUMBER: 60/088810
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APPLICATION NUMBER: 60/088858 FILING DATE: 1998-06-11 APPLICATION NUMBER: 60/088861

DR APPLICATION NUMBER: 60/088326
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DR APPLICATION NUMBER: 60/088212
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R APPLICATION NUMBER: 60/088029

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R APPLICATION NUMBER: 60/088030

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APPLICATION NUMBER: 60/088026 FILING DATE: 1998-06-04 APPLICATION NUMBER: 60/088028

NUMBER: 60/088028 : 1998-06-04

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RESULT 37
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              APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C49
CURRENT APPLICATION NUMBER: US/09/990,437
CURRENT FILING DATE: 2001-11-16
PRIOR APPLICATION NUMBER: 60/049787
PRIOR PILING DATE: 1997-06-16
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IN APPLICATION NUMBER: 60/090863
IN FILLING DATE: 1998-06-26
IN APPLICATION NUMBER: 60/91360
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IN FILING DATE: 1998-07-01
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APPLICATION NUMBER: 60/092182
FILING DATE: 1998-07-09
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APPLICATION NUMBER: 60/091978
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FILING DATE: 1998-07-02
APPLICATION NUMBER: 60/091626
FILING DATE: 1998-07-02
APPLICATION NUMBER: 60/091633
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FILING DATE: 1998-07-01
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FILING DATE: 1998-06-25
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Botstein, David
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Grimaldi, J. Christopher
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Kljavin, Ivar J.
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Gerritsen, Mary E.
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art, Timothy A.
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100.0%; Pred. No. 41
tive 0; Mismatches
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PRIOR FILING DATE: 1998-06-04
PRIOR APPLICATION NUMBER: 60/088326
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FILING DATE: 1998-06-11
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APPLICATION NUMBER: 60/089105
FILING DATE: 1998-06-12
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FILING DATE: 1998-06-16
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FILING DATE: 1998-06-05
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FILING DATE: 1998-04-28
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APPLICATION NUMBER: 60/065186
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60/088861 60/088858 60/088826 60/088824 60/088810 60/088742 60/088738

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APPLICATION FILING DATE:
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NUMBER: 60: 1998-06-1

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60/089514 60/089512

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APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C51
CURRENT APPLICATION NUMBER: US/09/991,157
CURRENT APPLICATION NUMBER: US/049787
PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
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APPLICATION NUMBER: 60/091360
FILING DATE: 1998-07-01
APPLICATION NUMBER: 60/091478
FILING DATE: 1998-07-02
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APPLICATION NUMBER: 60/
FILING DATE: 1998-07-09
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APPLICATION NUMBER: 60/091519
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Baker, Kevin P.
Botstein, David
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Stewart, ....
Stewart, ....
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Kljavin, Ivar J.
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Gerritsen, Mary E
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DR FILING DATE: 1998-06-22

RR APPLICATION NUMBER: 60/090254

RR FILING DATE: 1998-06-22

RR APPLICATION NUMBER: 60/090349

DR FILING DATE: 1998-06-23

RR APPLICATION NUMBER: 60/090355

APPLICATION NUMBER: 60/090246 FILING DATE: 1998-06-22 APPLICATION NUMBER: 60/090252

FILING DATE: 1998-06-19 FILING DATE: 1998-00 APPLICATION NUMBER:

APPLICATION NUMBER: 60/089948 FILING DATE: 1998-06-18 APPLICATION NUMBER: 60/089947 FILING DATE: 1998-06-19 APPLICATION NUMBER: 60/089908 FILING DATE: 1998-06-18
APPLICATION NUMBER: 60/089907
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60/089952

APPLICATION NUMBER: 60/089653 FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089801

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FILING DATE:

1998-06-

APPLICATION NUMBER: 60/089599 FILING DATE: 1998-06-17 APPLICATION NUMBER: 60/089600

APPLICATION NUMBER: 60/089598

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1998-06-

APPLICATION

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60/089538

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APPLICATION NUMBER: 60/090435
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APPLICATION NUMBER: 60/090444

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OR FILING DATE: 1998-06-17 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-17 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-19 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-18 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-18 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-19 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-19 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-19 OR APPLICATION NUMBER: 60/08 OR FILING DATE: 1998-06-29 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-22 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-22 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-22 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-23 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-24 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-25 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-26 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-26 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-26 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-26 OR APPLICATION NUMBER: 60/09 OR FILING DATE: 1998-06-26 OR						•																								•													_
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OR FILING DATE: 1998-02-25
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/078910
OR FILING DATE: 1998-03-20
OR APPLICATION NUMBER: 60/083322
OR FILING DATE: 1998-05-07
OR APPLICATION NUMBER: 60/08760
OR FILING DATE: 1998-05-28
OR APPLICATION NUMBER: 60/08760
OR FILING DATE: 1998-06-02
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APPLICANT: Zhang, Zemin

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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic

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TITLE OF INVENTION: Secreted and Transmembrane Polypeptides

FILE OF INVENTION: Secreted and Transmembrane Polypeptides

FILE OF INVENTION: US/09/997,514

CURRENT FILING DATE: 2001-11-15

PRIOR APPLICATION NUMBER: 60/049787

PRIOR FILING DATE: 1997-06-16

PRIOR FILING DATE: 1997-01-17

PRIOR APPLICATION NUMBER: 60/065186

PRIOR APPLICATION NUMBER: 60/06511

PRIOR APPLICATION NUMBER: 60/065311

PRIOR APPLICATION NUMBER: 60/06570

PRIOR FILING DATE: 1997-11-13

PRIOR APPLICATION NUMBER: 60/075945

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Botstein, David
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Gerritsen, Mary E.
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Kljavin, Ivar J.
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Grimaldi, J. Christopher
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APPLICATION NUMBER: 60/090696
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APPLICATION NUMBER: 60/090676
FILING DATE: 1998-06-25
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APPLICATION NUMBER: 60/090542
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APPLICATION NUMBER: 60/090557
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APPLICATION NUMBER: 60/090431
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APPLICATION NUMBER: 60/090435
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APPLICATION NUMBER: 60/090540
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APPLICATION NUMBER: 60/090472
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APPLICATION NUMBER: 60/089947
FILING DATE: 1998-06-19
APPLICATION NUMBER: 60/089948
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APPLICATION NUMBER: 60/090355
FILING DATE: 1998-06-23
APPLICATION NUMBER: 60/090429
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APPLICATION NUMBER: 60/089952
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APPLICATION NUMBER: 60/089908
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PRIOR APPLICATION NUMBER: 60/049787
PRIOR FILING DATE: 1997-06-16
PRIOR APPLICATION NUMBER: 60/062250
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PRIOR APPLICATION NUMBER: 60/065186
PRIOR FILING DATE: 1997-11-13
PRIOR APPLICATION NUMBER: 60/066770
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APPLICANT: Zhang, Zemin
TITLE OF INVENTION: Secreted and Transmembrane Polypeptides and Nucleic
TITLE OF INVENTION: Acids Encoding the Same
FILE REFERENCE: P2730P1C45
CURRENT APPLICATION NUMBER: US/09/997,573
CURRENT FILING DATE: 2001-11-15
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APPLICATION NUMBER: 60/091982
FILING DATE: 1998-07-07
APPLICATION NUMBER: 60/092182
FILING DATE: 1998-07-09
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Baker, Kevin P.
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Stewart, Timothy A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Grimaldi, J.Christopher Gurney, Austin L.
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Gerritsen, Mary E.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pan, James
Paoni, Nicholas F
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PRIOR PRIOR

APPLICATION NUMBER: 60/088021 FILING DATE: 1998-06-04 APPLICATION NUMBER: 60/088025

APPLICATION NUMBER: 60/087759
FILING DATE: 1998-06-02
APPLICATION NUMBER: 60/087827
FILING DATE: 1998-06-03

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Best Local Similarity 100.0%; Pred. No. 41;
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Apical membrane antigen 1 homolog.
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Apical membrane antigen 1.
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Plasmodium falciparum (isolat
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MEDLINE=22255705; PubMed=12368864; Gardner M.J., Hall N., Fung E., White O., Berriman M., Hyman R.W., Carlton J.M., Pain A., Nelson K.E., Bowman S., Paulsen I.T., James Eisen J.A., Rutherford K., Salzberg S.L., Craig A., Kyes S., Chan M.-S., Nene V., Shallom S.J., Suh B., Peterson J., Angiuoli S. Pertea M., Allen J., Selengut J., Haft D., Mather M.W., Valdya A.B. Martin D.M.A., Fairlamb A.H., Fraunholz M.J., Noos D.S., Ralph S.A., McFadden G.I., Cummings L.M., Subramanian G.M., Mungall C., Venter J.C., Carucci D.J., Hoffman S.L., Newbold C., Davis R.W.,
                                                                                                                                                                                                                                                                         MEDLINE=96379227; PubMed=8784778;
Marshall V.M., Zhang L.X., Anders R.F., Coppel R.L.;
"Diversity of the vaccine candidate AMA-1 of Plasmodium Mol. Biochem. Parasitol. 77:109-113(1996).
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Pfam; PF02430; AMA-1; 1.
PRINTS; PR01361; MEROZOTTESA.
SEQUENCE 622 AA; 72041 MW;
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EMBL; U33274; AAC47104.1; -.
EMBL; AE014841; AAN35928.1; -.
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Nature 419:498-511(2002)
                                                                            Plasmodium falciparum.
Eukaryota; Alveolata;
NCBI_TaxID=5833;
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STRAIN=VEN760
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the human malaria
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tive 84; Mismatches 213
                                                                                                        Apicomplexa;
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Wahlen B.L., Lal A.A.;
"Polymorphism in the gene encoding the apical membrane antigen-1
1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.";
Mol. Biochem. Parasitol. 113:279-287(2001).
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147; Conservative 86; Mismatches 2
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Marshall V.M., Zhang L., Anders R.F., Coppel
"Diversity of the vaccine candidate AMA-1 of
Mol. Biochem. Parasitol. 77:109-113(1996).
EMBL; U33275; AAC47105.1; -
InterProj. IPR003298; Apmen. Ag1.
Pfam; PF02430; AMA-1; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Alveolata;
NCBI_TaxID=5833;
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Pred. No. 8.3e-29;
7; Mismatches 202;
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Q967K2;
01-DEC-2001
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Bukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium
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01-MAR-2003
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SEQUENCE 622 AA; 72038 MW;
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Nahlen B.L., Lal A.A.;
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Escalante A.A., Grebert H.M., Chaiyaroj
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  EAEPSFWDEAEENIEQDGETHVMVEGDY 541
                                                                                                                                                           CPCDPEMV$NSTCRFFVCK-----CVERRAEVTSNNEVVVKEEYKDEYADIPEHKPTYDK
                                                                                                                                                                                                     CTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTA-----DEQNECGSN-----
                                                                                                                                                                                                                                                                                                                                                                                                           -----LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KDQSIRNSMFCFRPAKDISFQNY----TYLSKNVVDNWEKVCPRKNLENAKFGLWVDGN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          CEDIPHVNEF---SANDLFECNKLVFELS--ASDQPKQYEQHLTDYEKIKEGFKNKNASM
                                                                                                    -TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFOSDRGARKKRPSDLMQ
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Last annotation update)
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Plasmqdium falciparum.
Eukaryota; Alveolata;
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01-MAR-2001
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Shan Z.X., Yu X.B., Li X.R., Ma C.L., Fang J.M.;
"Cloning and structure of apical membrane antigen 1 (AMA
"Cloning and structure of apical membrane antigen 1 (AMA
structure of apical membrane antigen 1 (AMA
submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF277003; AAG01325.1; -.
InterPro; IPR003298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
Pfam; PF02430; AMA-1; 1.
PRINTS; PR01361; MEROZOITESA.
SEQUENCE 622 AA; 72045 MW; 69045E66776C3BBB CRC64;
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                                                                                                                                           SNTALI----AGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRP
                                                                                                                                                                                                                                               LOCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTS---
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                                                                                                                                                                                                LKCPCDPEIVSNSTCNFFVCK-----CVEKRAEVTSNNEVVVKEEYKDEYADIPEHKPTY
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26.4%; Pred. No. 1.2e-28;
cive 83; Mismatches 209
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Best Local S
Matches 149
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01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Apical membrane antigen-1 (Fragment).
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Q967K1;
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SEQUENCE
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Mahlen B.L., Lal A.A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases
EMBL; AY016614; AAG50121.1; -.
InterPro; IPR003299; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
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Eukaryota; Alveolata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=21192561; PubMed=11295182;
Escalante A.A., Grebert H.M., Chaiyaroj S.C.,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Polymorphism in the gene encoding the apical membrane antigen-1 (AMA-1) of Plasmodium falciparum. X. Asembo Bay Cohort Project."; %01. Biochem. Parasitol. 113:279-287(2001).
                                                                   489
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Similarity
                                                                                                                                                                                                                                    MIKSAFLPTGAFKADRYKSHGKGYNWGNYNTETQ---KCEIFNVKPTCLINNSSYIATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        IKASTDIGRCAEFAFKTVAMDKNNKATKYRYPFVYDSKKRICHILYVSMQIMEGKKYCSV 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PDRLPYRNNFLEDVPTEKEYKOSGNPLPGGFNLNFVTPSGQRISPFPME----LLEKNSN
--TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM 512
                                                                                                         QCTADKFPDSFGACDVQACKRQKTSCYGGQIQSTSVDCTA----
                                                                                                                                                   LSHPIEVENNF---PCSLYKNEIMKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDSL
                                                                                                                                                                                            CLDYTELTD-TVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN 160
                                                                 KCPCDPEIVSNSTCNFFVCK-----CVEKRAEVTSNNEVVVKEEYKDEYADIPEHKPTYD
                                                                                                                                                                                                                                                                                                                       CEDIPHVNEFSAIDLFE----CNKLVFELS--ASDOPKQYEQHLTDYEKIKEGFKNKNAS
                                                                                                                                                                                                                                                                             ------LHOSDOPHSGGVGRNYGFYYVDTTGEGKCALSDOVPDCLVSDSAAVSYTA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14.8%; Score 431; DB 5; Length 622;
26.2%; Pred. No. 1.2e-28;
Live 86; Mismatches 212; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Apicomplexa; Haemosporida; Plasmodium
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01-DEC-2001
01-DEC-2001
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Eukaryota; Alveolata;
NCBI_TaxID=5833;
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Escalante A.A., Grebert H.M., Chaiyaroj S.C., Magris M., B
Escalante A.A., Lal A.A.;
Nahlen B.L., Lal A.A.;
"Polymorphism in the gene encoding the apical membrane ant
1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.
nol. Biochem. Parasitol. 113:279-287(2001).
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NON_TER 622 622
SEQUENCE 622 AA; 71975 MW
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Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                            VKGBPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     S----PTEPLISPMTLDQMRHLYKDNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GNPW-----TEYMAKYDIEKVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN 160
                        ALSHPNEVENNF--PCSLYKDEIKKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDS
                                                                 AAGSLSEETPNFIIPSN-----
                                                                                                           SMIKSAFLPTGAFKADRYKSRGKGYNWGNYNTETQ---KCEIFNVKPTCLINNSSYIATT
                                                                                                                                                                                                                                    GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTY--PLTSQASWNDWWP----
                                                                                                                                                                                                                                                                                                                                                                YVKNLDELTLCSRHAGN--MNPDNDKNSNYKYPAVYDYEDKKCHILYIAAQENNGPRYCN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PDRLPYRNNFLEDVPTE-KEYKQSGNPLPGGFNLNFVTPSGQRISPFPME----LLEKNS
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                                                                                                                                                                                            GNCEDIPHVNEF---SANDLFECNKLVFELS--ASDQPKQYGQHLTDYEKIKEGFKNKNA
                                                                                                                                                                                                                                                                               -KDESKRNSMFCFRPAKDKLFENY-----TYLSKNVVDNWEEVCPRKNLENAKFGLWVD
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(TrEMBLrel. 19, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
rane antigen-1 (Fragment).
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                                                                                                                                               --LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  622
71975 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 426; DB 5; I
Pred. No. 3.3e-28;
81; Mismatches 210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
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                                                                 -----PSVTPPTPETA
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Nahlen B.L., Lal A.A.;
Nahlen B.L., Lal A.A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ
EMBL; AY016415; AAG50122.1; -
InterPro; IPR003298; Apmem_Ag1.
Pfan; PF02430; AMA-1; 1.
PRINTS; PR01361; MEROZOITESA.
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1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.";
Mol. Biochem. Parasitol. 113:279-287(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAINE VEN761;
MEDLINE=21192561; PubMed=11295182;
Escalante A.A., Grebert H.M., Chaiyaroj
Nahlen B.L., Lal A.A.;
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Eukaryota; Alveolata;
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                                                                                                                                                                                                                                                                                                   SN-----TTFLTPVATGNQYLKD-----GGFAF----PPTEPLMSPMTLDEMRHFYKDNKY
                                                                                                                                                                                                                                                                                                                                                                                                                   PDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRISPFPME----LLEKNSN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                          CLDYTELTD-TVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                                                                                         KGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKGR
                                                                                                                                                                                                                                                                       VKNLDELTLCSRHAGNMI -- PDNDKNSNYKY PAGYDDKDKKCHILY IAAQENNGPRYCN-
                                                                            CEDIPHVNEFSAIDLFE--
                                                                                                                                                                           KDESKRNSMFCFRPAKDISFONY----TYLSKNVVDNWEKVCPRKNLONAKFGLWVNGN
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(TrEMBLrel. 19, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
rane antigen-1 (Fragment).
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LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTA
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pfam; PF02430; AWA-1; 1.
PRINTS; PR01361; MEROZGOITESA.
SEQUENCE 558 AA; 63996 MW;
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Crewther P.E., Matthew M.L., Flegg R.H., Anders R.F.;
"Protective immune responses to apical membrane antig
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-DS
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Eukaryota; Alveolata;
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                                 LIGEALLPIGS-
                                                                            -----PLTSQASWNDWWPLHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLV
                                                                                                                                                                                                                              NEENNENQPFCFTPEKK-DEYKMLSYLTKNLRED---WETSCPNKSIQNAKFGVWVDGYC
                                                                                                                                                                                                                                                                            KGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRC
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nilarity 26.3%;
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Pred. No. 5.6e-28;
4; Mismatches 191
                                   -YRADQVKSKGKGYNWANY---DKKEKKCYIFNKKPTCLI
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Best Local Similarity
Matches 157; Conserv
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EMBL; AF063138; AAC16731.1; -...
InterPro; IPR003298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1...
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Eukaryota; Alveolata;
NCBI_TaxID=5855;
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                                                    ---EAEDLRECNRIVF--GASASDOPTOY----EEEMTDYQKIQQGFRQNNREMIKSAFL
                                                                                                        VIERVESKAQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQ-
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Q26162 PRELIMINARY; PRT; 555 AA.
Q26162; O1-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-MAR-2003 (TrEMBLrel. 23, Last annotation update)
Apcial membrane antigen I (Fragment).
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EMBL; L27503; AAA29479.1; -.
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MEDLINE=95021524; PubMed=7935625;
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VIERVESK--AQCWVKTFENDGVASDQPHTYPLTSQASWNDWWPLHQ------
                                                                                                                                                                                THAASFVMAGDON---SSYRHPAVYDEKNKTCHMLYLSAQENMGPRYCSSDAQNRDAV-F
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01-MAR-2003 (TrEMBLrel. 23, L
Apical merozoite antigen 1.
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Q964I3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
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Pfam; PF02430; AMA-1; 1.
PRINTS; PR01361; MEROZOITESA.
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EMBL; AF298218; AAG24614.1; -.
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Eukaryota; Alveolata; Apicomplexa;
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                                                                                                             VIAEDQN--TSYRHPAVYDEKNKTCYMLYLSAQENMGPRYCSPDSQNKD-AMFCFKPDKN
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 A--QCWVKTFENDGVASDQPHTY--PLTSQASWNDWWPLHQSDQPHSG-----
                                                                        VTENHHLIYGSAYVGENPDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIERVESK
                                      -EKFONLVYLSKNVSND----WENKCPRKNLGNAKFGLWVDGNCEEI-----PYVNEVEAR
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Query Match
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01-NOV-1996 (TrEMBLrel. 01, Last seq
01-NOV-1996 (TrEMBLrel. 23, Last ann
Apical membrane antigen-1 (Fragment)
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"Diversity of the vaccine candidate AMA-1 of Plasmodium Mol. Biochem. Parasitol. 77:109-113(1996).
EMBL; U3327; AAC47107.1; -.
Interpro; IPR003298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
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MEDLINE=96379227; PubMed=8784778;
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Eukaryota; Alveolata;
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                                          GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
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                                                                                             -KDESKRNSMFCFRPAKDKLFENY-----TYLSKNVVDNWEEVCPRKNLENAKFGLWVD
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OS Plasm
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OX NCBI-
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Q26225;
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PRINTS; PR01361; MEROZOITESA.
SEQUENCE 557 AA; 63531 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=96408692; PubMed=8813699;
Kappe S.H., Adamb J.H.;
Rappe S.H., Adamb J.H.;
"Sequence annalysis of the apical membrane antigen-1 genes
Plasmodium yoelii yoelii and Plasmodium berghei.";
Mol. Biochem. Parasitol. 78:279-283(1996).
EMBL; U45971; AAC47194.1; -...
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Bukaryota, Alveolata, Apicomplexa, Haemosporida, Plasmodium
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                                                                                                                                                                                                                                                            YKQSGN-PLPGGFNLNFVTPSGQRISPFPMELLE----KNSNIKASTDLGRCAEFAFKTV
      VESKAQCWVKTFENDGVASDQPHTY---
                                                                                       RKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKGRCLDYTELTDTVIER
                                                                                                                                                                                                                                                                                                                                                 THHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPTEKE
                                                                                                                                                                                                                                                                                                                                                                                                   CSTYLINLSYCS---EGPNQVVSDDGN---INYELIPKENTERSIKLINPWDKYMEKYDI
                                             EK-IEKYKNL----SYLTKNLRDDWETSCPNKSIRNAKFGIWVDGYCTDYQK---HVVHE
                                                                                                                                  P-GKDAKST-YRHPAVYDKSDSTCYMLYVAAQENMGPRYCSNDANNENQP-----FCFTP
                                                                                                                                                                         AMDKNNKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCS----VKGEPPDLTWYCFKP
                                                                                                                                                                                                                                                                                                            EKVHGSGIRVDLGEDARVENRDYRIPSGKCPVIGKGITIONS-----VVSFLKPVATGNE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14.3%; Score 419; DB 5;
25.3%; Pred. No. 1.1e-27;
tive 91; Mismatches 214
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Last sequence update)
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01-DEC-2001 (TrEMBLrel. 19,
01-DEC-2001 (TrEMBLrel. 19,
01-MAR-2003 (TrEMBLrel. 23,
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Nahlen B.L., Lal A.A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ
EMBL; AY016439; AAG50146.1; -.
Interpro; IPR003298; Apmem Ag1.
Pfam; PF02430; AMA-1; 1.
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"Polymorphism in the gene encoding the apical membrane antigen-1 (AMA-1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.";
Mol. Biochem. Parasitol. 113:279-287(2001).
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Eukaryota; Alveolata;
                                                                                                                                                                                                                                                                                                                                                          SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=21192561; PubMed=11295182; Escalante A.A., Grebert H.M., Chaiyaroj S.C.,
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                                                                                                                              101 PDRLPYRNNFLEDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPM----ELLEKNS 155
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                                                                                                                                                                                                                       41
YVKNIDELTICSRHAGNMI--PDNDKNSNYKYPAVYDDKDKKCHILYIAAQENNGPRYCN
                                                                                                                                                                         GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                                                                                                                     GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SHTTPVLMEKPY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LLV---AYYFK----SGKKGENYDRMGQADDYGKSKSRKDEMLDPEVSFWGEDK---RA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EETPNF-----IIPSN------PSVTPPTPETALQCTADKFPDSF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----YKSGQIKSHGKGYNWGNY---DSKNNKCYIFETKPTCLINDKNFIATTALSSTE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NDWWPLHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTAAGSLS
                                                                                                                                                                                                                                                                                                                                                       622
622 AA;
                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                              622
                                                                                                                                                                                                                                                                                                                                                          71959 MW;
                                                                                                                                                                                                                                                                                     14.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                83;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation updat
                                                                                                                                                                                                                                                              Score 419; DB 5; I
Pred. No. 1.3e-27;
13; Mismatches 215;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Created)
                                                                                                                                                                                                                                                                                                                                                          CCD62FCC45228065 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ₽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Magris M., Biswas
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Magris M.,

Biswas

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Length 622; Indels 124;

Gaps

160

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RESULT 17
Q967J4
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                                                                                                                                                                                                         Query Match
Best Local S
Matches 148
                                                                                                                                                                                                                                                                                                              Ananias E.A., Grebert H.M., Chaiyaroj S.C., Magris M., B

Mahlen B.L., Lal A.A.;

Nahlen B.L., Lal A.A.;

Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.

EMBL; AY016423; AAG50130.1; -.

InterPro; IPR003298; Apmem_Agl.

Ffam; PF02430; AMA-1; 1.

PRINTS; PR01361; MEROZOITESA.

NON_TER 622

622 AA; 72038 MW; D61DAAE60568C45A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-DEC-2001 (TrEMBLrel. 19, Created)
01-MAR-2003 (TrEMBLrel. 19, Last sequence update)
Apical membrane antigen-1 (Fragment).
AMA-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q967J4
Q967J4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-21192561; PubMed-11295182; Escalante A.A., Grebert H.M., Chaiyaroj S.C., Magris M., Biswas S., Nahlen B.L., Lal A.A.; Nahlen B.L., Lal A.A.; "Polymorphism in the gene encoding the apical membrane antigen-1 (AMA-1) of Plasmodium falciparum. X. Asembo Bay Cohort Project."; Mol. Biochem. Parasitol. 113:279-287(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Plasmodium falciparum.
Eukaryota; Alveolata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=14-0606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=14-0606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                328
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                                 101
                                                                                           107
                                                                                                                                                                                                         148;
                                                                                                                                                  41
                                                                                                                                                                                                                                       Similarity
PDRLPYRNNFLEDVPTEKEYKQSGNPLPGGFNLNFVTPSGQRISPFPM----ELLEKNSN 156
                                                                                           GNPW----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                          GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MLDPEASFWGEEK---RASHTTPVLMEKPY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ---TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTA-----DEQNECGSN----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -----LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GRCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALSHPIEVENNF--PCSLYKDEIMKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LKCPCDPEMVSNSTCNFFVCK-----CVERRAEVTSNNEVVVKEEYKDEYADIPEHKPTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                       14.3%;
26.1%;
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                                                                                                                                                                                                            81;
                                                                                                                                                                                                         Score 418; DB 5;
Pred. No. 1.6e-27;
31; Mismatches 219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Haemosporida;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   622
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                                                                                                                                                                                                                                                                Length
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Q26163;
Q1-NOV-1996
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EMBL; L27504; AAA29480.1; -.
InterPro, IPRO03299; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
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EAEPSFWDEAEENIEQDGETHVMVEGDY
                                            MKIIIASSAAVAVLATILM----VYLYKR----KGNAEKYDKMDEPQDYGKSNSR-NDEML
                                                                                       -TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLMQ
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DPEASFWGEEK---RASHTTPVLMEKPY

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Plasmodium vivax. Eukaryota; Alveolata; Apcial membrane AMA-1. NCBI\_TaxID=5855; (TIEMBLrel. 01, Created)
(TIEMBLrel. 01, Last sequence update)
(TIEMBLrel. 23, Last annotation updat
rane antigen I (Fragment). Apicomplexa; Haemosporida; Plasmodium.

Cheng Q., Saul A.J.;
"Sequence analysis of the apical plasmodium vivax."; SEQUENCE FROM N.A. STRAIN=PVQ; MEDLINE=95021524; PubMed=7935625; membrane antigen

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PRINTS; PR01361; MEROZOITESA.
NON TER 555 555
SEQUENCE 555 AA; 63575 MW; 58 53 σ 4 IYYIIFLSAQCLVHIGKCGRNQKPSRLTRSANNVLLEKGPTVERSTRMSNPW-----KA Similarity FMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLE 112 VQVLLVLVADCTIFASGL-----SSSTRS-----RESQTLSAST-SGNPFQANVEMKT FMEKYDIERTHSSGVRVDLGEDAEVENAKYRIPAGRCPVFGKGIVIENSD---Conservative 14.3%; 90; Score 416.5; DB 5 Pred. No. 1.9e-27; 90; Mismatches 215 DC64155A74A1D916 CRC64; DB 5; 215; Indels 141; Length 555; Gaps VSFLT 52 57

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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Apical membrane antigen 1 (Fragment).
                                                                                                                                                                                                                                                                                                                                                                        NON TER
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Eukaryota; Alveolata; Apicomplexa;
BUCBI_TaxID=5854;
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EMBL; AJ252087; CAB66387.1; -:
InterPro; IPR001298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
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                         YREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPT-EKEYKQSGNPLPGGFNLNFVTPSG
                                                                                      RHEQNIFSSNEIVERSNYMGNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQ
                                                                                                                                               RESOTLSASTS-----GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTL
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Best Local
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
Apical membrane antigen 1 (Fragment).
83/AMA-1.
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Q9N9G0;
01-OCT-2000
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SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Alveolata;
NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                        PRINTS;
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Pfam; PF02430; AMA-1; 1.
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                               GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN 152
                                                                  GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
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                                                                                                                                                                                                                                                                        526
526 AA;
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                                                                                                                                                                                                                                                                                                        526
                                                                                                                                                                                                                                                                        60799 MW;
                                                                                                                                               14.1%; Score 413; DB 5;
27.3%; Pred. No. 3.5e-27;
tive 72; Mismatches 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEQNECGSNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHH 493
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Best Local S
Matches 147
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Q967J8;
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                                                                                                                                                                                                                                                                                           SEQUENCE
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Nahlen B.L., Lal A.A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ
EMBL; AY014419; AAG50126.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Polymorphism in the gene encoding the apical meml
1) of Plasmodium falciparum. X. Asembo Bay Cohort
Mol. Biochem. Parasitol. 113:279-287(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Escalante A.A., Grebert H.M., Nahlen B.L., Lal A.A.;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Plasmodium falciparum.
Eukaryota; Alveolata;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Apical membrane antigen-1 (Fragment).
                                                                                                                                                                                                                                                                                                                      InterPro; IPR003298; Apmem_Ag1.
pffam; PF02430; AWA-1; 1.
PRINTS; PR01361; MEROZOITESA.
NON_TER 622 622
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-VEN764;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MIKSAFLPTGAFKADRYKSHGKGYNWGNYNTETQ----KCEIFNVKPTCLINNSSYIATTA
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PDRLPYRNNFLEDVPT-EKEYKQSGNPLPGGFNLNFVTPSGQRISPFPM----ELLEKNS : : | | : : | | : : : |
                                                                                                              GNPFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KCPCDPEIVSNSTCNFFVCK-----CVEKRAXVTS
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                                                                               GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                                                                                                                                                                                              622 AA;
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                                                                                                                                                                                                                                                                                           71943 MW;
                                                                                                                                                                                                                 14.1%;
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                                                                                                                                                                                           82;
                                                                                                                                                                                     Score 413; DB
Pred. No. 4.4e-
82; Mismatches
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Last annotation update)
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4.4e-27;
ches 218;
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                                                                                                                                                                                                                                         Length 622;
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Project.";
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Query Match Best Local Similarity Matches 150; Conserv Plasmodium falciparum. Eukaryota; Alveolata; Ananias E.A., Grebert H.M., Nahlen B.L., Lal A.A.; Submitted (DEC-2000) to the EMBL, AY016422; AAG50129.1; MEDLINE=21192561; PubMed=11295182; Escalante A.A., Grebert H.M., Chaiyaroj Nahlen B.L., Lal A.A.; InterPro; IPR003298; Apmem\_Agl. Pfam; PF02430; AMA-1; 1. PRINTS; PR01361; MEROZOITESA. NON\_TER 622 622 SEQUENCE FROM N.A. SEQUENCE FROM N.A. NCBI\_TaxID=5833; "polymorphism in the gene encoding the apical membrane antigen-1 (AMA-l) of Plasmodium falciparum. X. Asembo Bay Cohort Project."; (0). Biochem. Parasitol. 113:279-287(2001). (TrEMBLrel. 19, 11 (TrEMBLrel. 19, 19) (TrEMBLrel. 23, 19) 622 AA; Conservative PRELIMINARY; antigen-1 72010 MW; 14.1%; Score 413; DB 5; 26.1%; Pred. No. 4.4e-27; tive 80; Mismatches 212 Apicomplexa; Haemosporida; Plasmodium (Fragment) Last sequence update)
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                                                                                                                                                                   621
621 AA;
                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                   621
71921 MW;
                                                                      14.1%; Score 412.5; DB 5; 26.1%; Pred. No. 4.9e-27; tive 80; Mismatches 216;
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                                                                                                                                                                   6EA2A8C5142D8A7D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Haemosporida; Plasmodium
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Best Local :
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Q26224;
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Pfam; PF02430; AMA-1; 1.
PRINTS; PR01361; MEROZOITESA.
SEQUENCE 557 AA; 63462 MW;
                                                                                                                                                                                                                                                                                                                               "Sequence analysis of the apical membrane antigen-1 plasmodium yoelii yoelii and Plasmodium berghei."; Mol. Biochem. Parasattol. 78:279-283(1996).
EMBL; U45970; AAC47193.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-DEC-2001 (TrEMBLrel. 19
Apical membrane antigen-1.
Plasmodium yoelii.
Eukaryota; Alveolata; Apic
                                                                                                                                                                                                                                                                                                                                                                                                                      Kappe S.H., Adams J.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=96408692; PubMed=8813699,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN=YM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=5861;
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                                                                                                                                             148;
       62
                                                   11
                                                                                                                                                                   Similarity
    HHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQPDRLPYRNNFLEDVPT-EKEY 120
                                                                                            CTIFASGLSSSTRSRESQTLSASTSGN-----PFQANVEMK-----TFMERFNLTH 61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KIIIASSAAVAVLATILMV-----YLYKR----KG-NAEKYDKMDQPQHYGKSTSRNDE
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                                                CSIYLINLSYCS---EGPNQVISEDGNINYESIP-KENTERSIKLINPWDKYMEKYDIEK 66
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6 (Tremblrel. 01,
1 (Tremblrel. 19,
                                                                                                                                          Conservative
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                                                                                                                                                                14.1%; Score 412; DB 5;
24.3%; Pred. No. 4.6e-27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Apicomplexa; Haemosporida; Plasmodium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                       65D407E63D315487 CRC64;
                                                                                                                                             Mismatches 215;
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01-DEC-2001
01-DEC-2001
01-MAR-2003
                                 Ananias E.A., Grebert H.M., Chaiyaroj S.C., Ma
Nahlen B.L., Lal A.A.,
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ
EMBL; AY016416; AAG50123.1; -.
EMBL; AY016418; AAG50125.1; -.
EMBL; AY016418; AAG50125.1; -.
InterPro; IPR001298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
                                                                                                                                                                                                                        Wahlen B.L., Lal A.A.;
"Polymorphism in the gene encoding the apical membrane antigen-1 (AMA-1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.";
Mol. Biochem. Parasitol. 113:279-287(2001).
                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
STRAIN=VEN767, and VEN762;
MEDLINE=21192561; PubMed=11295182;
Escalante A.A., Grebert H.M., Chaiyaroj
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q95NZ1
               PRINTS;
                                                                                                                                                                 STRAIN=VEN767,
                                                                                                                                                                                       SEQUENCE FROM N.A.
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I_TaxID=5833;
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    Created)
    Last sequence update)
    Last annotation update

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01-DEC-2001
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                                                                                                                                                                             STRAIN=VEN765;
MEDLINE=21192561; PubMed=11295182;
Chai
                                                                                                                                                                                                                                                                                                                                                            01-DEC-2001
01-MAR-2003
                                                                                           "Polymorphism in the gene encoding the apical 1) of Plasmodium falciparum. X. Asembo Bay Coh Mol. Biochem. Parasitol. 113:279-287(2001).
                                                                                                                                                  Escalante A.A., Grebert H.M., Nahlen B.L., Lal A.A.;
                                                                                                                                                                                                                                                                                  Plasmodium
Eukaryota;
Ananias E.A., Grebert
Nahlen B.L., Lal A.A.;
                                    STRAIN=VEN765;
                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                 NCBI_TaxID=5833;
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                     H.M.,
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Last annotation updat
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                     Chaiyaroj
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Pred. No. 5.4e-27;
1; Mismatches 219
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                                                                                                                                                                       Chaiyaroj
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RESULT 27
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01-JUL-1997
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                                     Eisen D.,
Submitted
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NON TER 622 622
SEQUENCE 622 AA; 71965 MW;
                                                                                                             Plasmodium falciparum 
Eukaryota; Alveolata;
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 SEQUENCE FROM N.A STRAIN=KF1916;
                                                             STRAIN-KF1916;
                                                                                                                                       Apical membrane 
AMA-1.
                                                                                                 NCBI_TaxID=57269;
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                                                                                                                                                                                                                                                                                                  RPSDLMQEAEPSFWDEAEENIEQDGETHVMVEGDY
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                                      (FEB-1997)
                                                  Billman-Jacobe
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(TrEMBLrel. 04, Last sequence update)
(TrEMBLrel. 23, Last annotation updat
rane antigen-1 (Fragment).
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                                                                                                             Apicomplexa; Haemosporida;
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                                    Marshall V.M., Co
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Best Local S
Matches 146
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STRAIN-ANKA;
MEDLINE-96408692; PubMed-8813699;
Kappe S.H., Adams J.H.;
Requence analysis of the apical membrane antige
Plasmodium yoelii yoelii and Plasmodium berghei.
                                                                                   Apical membrane antigen-1.
Plasmodium berghei (strain Anka)
Eukaryota; Alveolata; Apicomplex:
NCBI TaxiD=5823;
                                                                                                                             Q25657;
01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-DEC-2001 (TrEMBLrel. 19, Last annotation updat
                                                                                                                                                                                          Q25657
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EMBL; U45969; ARC47192.1; -.
InterPro; IPR003298; Apmem_A91.
Pfam; PF02430; AWA-1; 1.
PRINTS; PR01361; MEROZOITESA.
SEQUENCE 556 AA; 63660 MW; D8E6FCESEF
                                                                                                                                                                                                                                                                                                                        Q95NJ2
Q95NJ2;
  SEQUENCE FROM N.A.
STRAIN-SL81, and T422;
MEDLINE-21192561; PubMed-11295182;
EScalante A.A., Grebert H.M., Chaiyaroj
                                                                                                                                                                         Plasmodium
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LCAKHT--SFYVPGNNANSAYRHPAVYDKSNSTCYMLYVAAQENMGPRYCS-NNANNDNQ
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                                                                                                                                                falciparum.
Alveolata;
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                                                                                                                                                                                                                       (TTEMBLrel. 19, Created).
(TTEMBLrel. 19, Last sequence up
(TTEMBLrel. 23, Last annotation
rane antigen-1 (Fragment).
                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
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23.9%; Pred. No. 6.9e-27;
tive 110; Mismatches 212;
                                                                                                                                                     Apicomplexa;
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                                                                                                                                                     Haemosporida;
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     s.c.,
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on update)
       Magris
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          Biswas
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RESULT 30
Q967JG
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Q967J6;
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01-MAR-2003
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Ananias E.A., Grebert H.M., Chaiyaroj S.C., Ma
Nahlen B.L., Lal A.A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ
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NON TER 622 622
SEQUENCE 622 AA; 72025 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AY016429; AAG50136.1; -.
EMBL; AY016430; AAG50137.1; -.
INTERFPC; IPR002298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           161
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GNDFQANVEMKTFMERFNLTHHHQSGIYVDLGQDKEVDGTLYREPAGLCPIWGKHIELQQ 100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SN-----PTNPLISPMTLNGMRDFYKNNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK
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                                                                                                                                                                                                                                                                                                                DNMKIIIASSAAVAVLATILMV-----YLYKR----KG-NAEKYDKMDQPQHYGKSTSR
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                                                                                                                                                                                                                                                                            SDLMQEAEPSFWDEAEENIEQDGETHVMVEGDY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAGSLSEETPNFIIPSN----
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                                                                                                                                                                                                                                           -RASHTTPVLMEKPY
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Apical membrane antigen-1 AMA-1. Plasmodium falciparum.

(Fragment)

Last sequence update)
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PRELIMINARY;

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RESULT 31
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Best Local S
Matches 147
 Q9N9E4
Q9N9E4;
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Nahlen B.L., Lal A.A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases EMBL; AY016421; AAG50128.1; -.
InterPro; IPR003298; Apmem_Ag1.
Pfam, PF02430; AMA-1; 1.
Pfam, PF02430; AMA-1; 1.
PRINTS; PR013161; MEROZOITESA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Polymorphism in the gene encoding the apical membrane 1) of Plasmodium falciparum. X. Asembo Bay Cohort Projemol. Biochem. Parasitol. 113:279-287(2001).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQÜENCE
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NCBI_TaxID=5833;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               al Similarity
147; Conserv
                                                                                                                                                                                                LSHPNEVEHNF---PCSLYKDEIKKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDIDSL
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                                                                                                                                                                          QCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTSVDCTA-----DEQNECGSN-----
                                                                                                                                                                                                                                            MIKSAFLPTGAFKADRYKSRGKGYNWGNYNRKTQ---KCEIFNVKPTCLINNSSYIATTA
                                                                                                                                                                                                                                                                                      NCEDIPHVNEF---SANDLFECNKLVFELS--ASDQPKQYEQHLTDYEKIKEGFKNKNAS
                                                                                                                                                                                                                                                                                                                                                     VKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKG
                                                                                                                                                                                                                                                                                                                                                                                                                        SN-----TTFLKPVATGNQDLKDGGFAFP-----PTNPLISPMTLDHMRDFYKNNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GNPW-----TEYMAKYDIEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                   LDPEASFWGEEK---RASHTTPVLMEKPY
                                                                                       QEAEPSFWDEAEENIEQDGETHVMVEGDY 541
                                                                                                           KMKIIIASSAAVAVLATILM---VYLYKR----KGNAEKYDKMDEPQDYGKSNSR-NDEM
                                                                                                                                 -- TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM
                                                                                                                                                                                                                                                                                                            RCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                      KCPCDPEIVSNSTCNFFVCK-----CVEKRAEVTSNNEVVVKEEYKDEYADIPEHKPTYD
                                                                                                                                                                                                                                                                ------LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTA
                                                                                                                                                                                                                                                                                                                                   -KDESKRNSMFCFRPAKDKSFQNY----TYLSKNVVDNWEKVCPRKNLENAKFGLWVDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           622 AA;
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            PRELIMINARY;
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Pred. No. 8.1e-27;
             PRT;
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Best Local
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SEQUENCE
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Plasmodium falciparum
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Apical membrane antigen-1
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01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-JUN-2001 (TrEMBLrel. 17, Last annotation updat
Apical membrane antigen 1 (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Kocken C.H.M., Narum D.L., Massougbodji A., Ayivi B., van der Wel A., Conway D.J., Sanni A., Thomas A.W.; "Molecular characterisation of Plasmodium reichenowi antigen-1 (AMA-1), comparison with P, falciparum AMA-mediated inhibition of red cell invasion.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=5833;
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Pfam; PF02430; AMA-1; 1.
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EMBL; AJ271185; CAB97197.1; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S-----KTTFLTPVATENQDLKDGGFAFP-----PTKPLMSPMTLDEMRHFYKDNK 198
                                                                                                                                                                                                                                                                                                   LOCTADKEPDSEGACDVQACKRQKTSCVGGQIQSTS
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526 AA;
                                   (TrEMBLrel. 19, Created)
(TrEMBLrel. 19, Last sequence update)
(TrEMBLrel. 23, Last annotation update)
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                                                                                                                                          PRELIMINARY;
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60917 MW;
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27.0%;
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                       (Fragment)
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Pred. No. 1.2e-26;
                                                                                                                                             PRT;
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RESULT 33
Q9GVB7
ID Q9GVB
AC Q9GVB
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Best Local Similarity
  Q9GVB7
Q9GVB7;
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EMBL; AY016420; AAG50127.1; -.
InterPro; IPR003298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1.
PRINTS; PR01361; MEROZZITESA.
NON_TER 622
SEQUENCE 622 AA; 71989 MW; 468816B752CA30D4 CRC64;
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Ananias E.A., Grebert H.M.,
Nahlen B.L., Lal A.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=21192561; PubMed=11295182;
Escalante A.A., Grebert H.M., Chaiyaroj S.C., Magris M., Biswas S.,
Nahlen B.L., Lal A.A.;
"Polymorphism in the gene encoding the apical membrane antigen-1 (AMA-
1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.";
Mol. Biochem. Parasitol. 113:279-287(2001).
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NCBI_TaxID=5833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SN-----PTTFLKPVATGNODLKDGGFAFP-----PTNPLISPMTLDHMRDFYKNNE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GNPW-----TEYMAKYDVEEVHGSGIRVDLGEDAEVAGTQYRLPSGKCPVFGKGIIIEN
                                                                                                                                                                                                                                                                                                                                                                                    LSHPNEVEHNF--PCSLYKDEIKKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDIDSL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MIKSAFLPTGAFKADRYKŚRĠKĠYŃWĠNYNRKTQ----KĊEIFNVKPTĊLINNŚSYIATTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCEDIPHVNEF --- SANDLEECNKLVEELS -- ASDQPKQYEQHLTDYEKIKEGFKNKNAS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP-----
                                                                                                                                                                    QEAEPSFWDEAEENIEQDGETHVMVEGDY 541
                                                                                                                                                                                                                                                       SNTALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM
                                                                                                                                                                                                                                                                                                KCPCDPEIVSNSTCNFFVCK-----CVEKRAEVISNNEVVVKEEYKDEYADIPEHKPTYD
                                                                                                                                                                                                                                                                                                                                        QCTADKFPDSFGACDVQACKRQKTSCVGGQ---IQSTSVDCTADEQNECG-----
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                                                                                                                            LDPEASFWGEEK---RASHTTPVLMEKPY
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                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13.9%; Score 407; DB 5; L
25.7%; Pred. No. 1.5e-26;
ive 81; Mismatches 220;
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                          PRT;
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                                                                   RESULT 34
Q96718
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Best Local
        Q967I8
Q967I8;
Q1-DEC-2001
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01-MAR-2001 (TrEMBLrel. 16, Last sequence up
01-DEC-2001 (TrEMBLrel. 19, Last annotation
Apical membrane antigen 1 (Fragment).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YVKNLDELTLCSRHAGN--MNPDNDKNSNYKYPAVYDYNDKKCHILYIAAQENNGPRYCN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SN-----PTTPLKPVATGNODLKDGGFAFP-----PTNPLISPMTLNGMRDFYKNNE
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                                                                                                                                                                                          SDLMQEAEPSFWDE
                                                                                                                                                                                                                                                                                 SNTALI----AGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SMIKSAFLPTGAFKADRYKSHGKGYNWGNYNRETO---KĆEIFNVKPTCLINNSSYIATT
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                                                                                                                                                         NDEMLDPEASFWGE
                                                                                                                                                                                                                                            DNMKIIIASSAAVAVLATILMV-----YLYKR----KG-NAEKYDKMDQPQHYGKSTSR
                                                                                                                                                                                                                                                                                                                                                                  LQCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTS-----VDCTAD--EQNECG
                                                                                                                                                                                                                                                                                                                                                                                                              ALSHPIEVEHNF--PCSLYKDEIKKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDS
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605 AA;
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             (TrEMBLrel.
                                                    PRELIMINARY;
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             19,
                                                                                                                                                                                                  522
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Pred. No. 1.6e-26;
'7; Mismatches 205;
               Created)
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Indels Length

Gaps

605; 127;

Plasmodium

8

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404

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452 479

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Apical membrane
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NON TER 622 622
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Pfam; PF02430; AMA-1; 1.
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Escalante A.A., Grebert H.M., Chaiyaroj
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NCBI_TaxID=5833;
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Eukaryota; Alveolata;
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1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.
Mol. Biochem. Parasitol. 113:279-287(2001).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NIKASTDLGRCAEFAFKTVAMDKNIKATKYRYPFVYDSKKRLCHILYVSMQLMEGKKYCS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               YVKNLDELTLCSRHAGN--MNPDNDKNSNYKYPAVYDDKDKKCHILYIAAQENNGPRYCN
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LDPEASFWGEEK---RASHTTPVLMEKPY
                                              QEAEPS FWDEAEENIEQDGETHYMVEGDY
                                                                                                  KMKIIIASSAAVAVLATILM----VYLYKR-----KGNAEKYDKMDEPQHYGKSNSR-NDEM
                                                                                                                                                -- TALIAGLAVGGYLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM
                                                                                                                                                                                                    KCPCDPEIVSNSTCNFFVCK-----CVEKRAEVTSNNEVVVKEEYKDEYADIPEHKPTYD
                                                                                                                                                                                                                                                     QCTADKFPDSFGACDVQACKROKTSCVGGQIQSTSVDCTA----
                                                                                                                                                                                                                                                                                                         LSHPIEVEHNF -- PCSLYKDEIKKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDIDSL
                                                                                                                                                                                                                                                                                                                                                               AGSLSEETPNFIIPSN--------
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25.5%; Pred. No. 1.8e-26;
tive 83; Mismatches 219
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RESULT 36
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01-OCT-2000
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOl. Biochem. Parasitol. 109:147-156(2000).
EMBL; AJ271177; CAB97189.1; -.
InterPro; IPR003298; Apmem_Ag1.
Pfam; PF02430; AMA-1; 1
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-2000 (TrEMBLrel. 15, Last sets
-2001 (TrEMBLrel. 19, Last and
membrane antigen 1 (Fragment).
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                                                                                                                                                                                                                                          RCLDYTELTD-TVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
                                                                                                                                                                                                                                                                                                                                                                              SN-----PTKPLMSPMTLDEMRHFYKDNK
                                                                                                                                                                                                                                                                                                                                                                                                       PDRLPYRNNFLEDVPTE-KEYKQSGNPLPGGFNLNFVTPSGQRISPFPME----LLEKNS 155
                                                                                                       ALSHPIEVENNF---PCSLYKNEIMKEIERESKRIKLNDNDDEGNKKIIAPXIFISDDKDS
                                                                                                                                SMIKSAFLPTGAFKADRYKSHGKGYNWGNYNTETQ---KCEXFNVKPTCLINNSSYIATT
                                                                                                                                                                                                                 NCEDIPHVNEFSAIDLFE--
                                                                                                                                                                                                                                                                     -KDESKXNSMFCFRPAKDISFQNY----TYLSKNVVDNWEKVCPRKNLQNAKFGLWVDG
                                                                                                                                                                                                                                                                                             VKGEPPDLTWYCFKPRKSVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKKG
                                                                                                                                                                                                                                                                                                                          YVKNLDELTLCXRXAGNMI---PDNDKNSNYKYPAVYDDKDKKCHILYIAAQENNGPRYCN
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                                                     LKCPCDPEIVSNSTCNFFVCK--
                                                                            LQCTADKFFDSFGACDVQACKRQKTSCVGGQIQSTS
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526 AA;
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                                                                                                                                                                                    -LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYT 376
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Last annotation updat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 405; DB 5; I
Pred. No. 1.7e-26;
71; Mismatches 162;
                                                                                                                                                                                                                --CNKLVFELS--ASDQPKQYEQHLTDYEKIREGFKNKNA
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NON TER 622 622
SEQUENCE 622 AA; 72079 MW;
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Nahlen B.L., Lal A.A.;
Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases
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Eukaryota; Alveolata;
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                                                  DIMQEAEPSFWDEAEENIEQDGETHVMVEGDY 541
                                                                                                                                                          NTALI----AGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPS
                                                                                                                                                                                                                KCPCAPEIVSNSTCHFFVCK-----CVERRAEVTSNNEVVVKEEYKDEYADIPEHKPTYD
                                                                                                                                                                                                                                                               QCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTS----
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DEMLDPEASFWGEEK---RASHTTPVLMEKPY
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RESULT 38 Q25667 ID Q2566 AC Q2566 DT 01-NC

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01-OCT-2000 (TrEMBLrel. 15, Last seq
01-JUN-2001 (TrEMBLrel. 17, Last ann
Apical membrane antigen 1 (Fragment)
83/AMX-1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              antigen-1 (AMA-1), comparison with P, falciparum AMA-1, mediated inhibition of red cell invasion.";
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EMBL; AJ271175; CAB97187.1; -.
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                                                                                                              LSHPIEVEHNF--PCSLYKNEXMKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKDSL
                                                                                                                                                                                                                         MIKSAFLPTGAFKADRYKSHGKGYNWGNYNRETQ---KCEIFNVKPTCLINNSSYIATTA
                                                                                                                                                                                                                                                                                                                                     NCEDIPHVNEF---SANDLFECNKLVFELS--ASDQFKQYEQHLTDYEKIKEGFKNKNAS
                                                                                                                                                                                                                                                                                                                                                                                         RCLDYTELTDTVIERVESKAQCWVKTFENDGVASDQPHTYP--LTSQASWNDWWP----
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  KCPCDPEIVSNSTCNFFVCK-----
                                                    QCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTS
                                                                                                                                                                                                                                                                           -----LHQSDQPHSGGVGRNYGFYYVDTTGEGKCALSDQVPDCLVSDSAAVSYTA
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526 AA;
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; Pred. No. 2.1e-26;
68; Mismatches 166;
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Dutta S., Malhotra P., Chauhan S.;
"Sequence analysis of apical membrane antigen 1 (AMA-1) of Plasmodium cynomoly bastianelli.";
Mol. Biochem. Parasitol. 73:267-270(1995).
EMBL; X86099; CAA60053.1; -...
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Eukaryota; Alveolata;
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Pfam; PF02430; AMA-1; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   THAASFVMAGDON---SSYRHPAVYDEKEKTCHMLYLSAQENVGPRYCSRDAENRD-AMF
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                                                                                                                           THVMVEGDY 541
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                                                                           TPVLMEKPY
                                                                                                                                                                                                                                                                           ----NCVEKRABIKENNEVVIKEEFKEDYQNEDGKSNNKMLLIIIGVTGGVCVVALASL
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                                                                                                                                                                              FYFRKK--
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1 precursor (Fragment).
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Eukaryota; Alveolata;
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B L., Lal A.A.;
PAGO) to
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MEDLINE-21192561; PubMed=11295182;
Escalante A.A., Grebert H.M., Chaiyaroj S.C., Magris M., Biswas S.,
Rahlen B.L., Lal A.A., en
"Polymorphism in the gene encoding the apical membrane antigen-1 (AMA-
1) of Plasmodium falciparum. X. Asembo Bay Cohort Project.";
Mol. Biochem. Parasitol. 113:279-287(2001).
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Submitted (DEC-2000) to the EMBL/GenBank/DDBJ
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NON_TER 622 622
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Pfam; PF02430; AMA-1; 1.
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KMKIIIASSAAVAVLATILM----VYLYKR-----KGNAEKYDKMDEPQHYGKSNSR-NDEM
                                            --TALIAGLAVGGVLLLALLGGGCYFAKRLDRNKGVQAAHHEHEFQSDRGARKKRPSDLM
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(TremBLrel. 23, Last annotation update)
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5; Mismatches
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Pred. No. 2.7e-26;
5; Mismatches 217;
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NON TER 526 526
SEQÜENCE 526 AA; 60834 MW;
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EMBL; AJ271183; CAB97195.1; -.
InterPro; IPR003298; Apmem_Ag1.
Pfam; PF02330; AMA-1; 1.
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Eukaryota; Alveolata; Apicomplexa; Haemosporida; Plasmodium.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           199 YVKNLDELTLCSRHAGN--MNPDNDKNSNYKYPAVYDDKDKKCHILYIAAQENNGPRYCN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    404 ALOCTADKFPDSFGACDVQACKRQKTSCVGGQIQSTS 440
                                                                                                                   421
                                                                                                                                                                                                                                                                                                  328
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                216 VKGEPPDLTWYCFKPRK-SVTENHHLIYGSAYVGEN-PDAFISKCPNQALRGYRFGVWKK 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        153 SN-----TTFLTPVATENQDLKDGGFAFP-----PTNPPMSPMTLDQMRHFYKDNK 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       101 PDRLPYRNNFLEDVPTE-KEYKQSGNPLPGGFNLNFVTPSGQRISPFPMELL----EKNS
479
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GNCEDIPHVNEFPAIDLFE----CNKLVFELS--ASDQPKQYEQHLTDYEKIKEGFKNKN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -KDESKRNSMFCFRPAKDKLFENY-----TYLSKNVVDXWEKVCPRKNLQNAKFGLWVD
SLKCPCDPEIVSNSTCNFFVCK----
                                                                                                                   TALSHPIEVENNF--PXSLYKNEIMKEIERESKRIKLNDNDDEGNKKIIAPRIFISDDKD
                                                                                                                                                                           TAAGSLSEETPNFIIPSN------
                                                                                                                                                                                                                                    ASMIKSAFLPTGAFKADRYKSHGKGYNWGNYNTETQ---KCEIFNVKPTCLINNSSYIAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   526 AA; 60834 MW; FB9F569E4DE88DD1 CRC64;
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(TrEMBLrel. 15, Last sequence update)
(TrEMBLrel. 17, Last annotation update)
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